REPORTER'S RECORD
VOLUME 1 OF 1 VOLUME
TRIAL COURT CAUSE NO. 2011-76724

HARRIS COUNTY, TEXAS, *Plaintiff*, and THE STATE OF TEXAS, acting by and through The TEXAS COMMISSION ON ENVIRONMENTAL QUALITY, *a Necessary and indispensable Party*	*	IN THE DISTRICT COURT OF
v.	*	HARRIS COUNTY, T E X A S
INTERNATIONAL PAPER COMPANY, McGinnis INDUSTRIAL MAINTENANCE CORPORATION, WASTE MANAGEMENT, INC., AND WASTE MANAGEMENT OF TEXAS, INC., *Defendants*.	*	295TH JUDICIAL DISTRICT

REPORTER'S RECORD

DAILY COPY

OCTOBER 17, 2014

On the 17th day of October, 2014, the trial came on to be heard in the above-entitled and -numbered cause; and the following proceedings were had before the Honorable Caroline Baker, Judge Presiding, held in Houston, Harris County, Texas:

Proceedings reported by computerized stenotype machine; Reporter's Record produced by computer-assisted transcription.

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MS. MELANIE GRAY

OCTOBER 17th, 2014

THE COURT: We're going on the record. Mr. Wotring.

MR. WOTRING: The first issue that Harris County would like to raise has to do with the use of Defendants' Exhibit 8, and that's the e-mail chain from Marshall Cedilote, C-e-d-i-l-o-t-e. The transcript will reflect what was exactly said, but my memory is that counsel for the defendant, Waste Management, invited the jury to compare the State's response to that letter with their conduct in determining a penalty amount. And the response to that letter is contained in a document that the TCEQ produced in this matter. State underscore --

MR. BENEDICT: Earnest, if I may interject? That one may be missing a page. I have a better citation. It's State_A0309862 through 0311299.

Now, its a five-volume document. There may be parts of it that don't need to come in.

MR. WOTRING: So we're giving everybody advanced notice that we're going to be moving to supplement our exhibit list for the introduction of that report. And that report is extensive and we think it's required now, as a result of arguments made in opening.

THE COURT: What is that document?

MR. BENEDICT: It is the site screening investigation. It specifically refers to the Parks & Wildlife referral to TCEQ in 2005. And at the request of EPA, the TCEQ conducted a site screening investigation of the San Jacinto River Waste Pits, reviewing the sampling history and then reported back to the EPA in September 2006.

MS. BAKER: I believe we talked about it before, also. It has the signature of people that did testing. We talked about why the defendants thought the UAO wasn't authenticated. It's based on the testing thing done by the TCEQ, and we wanted to use that document.

MR. BENNETT: I was just going to add, I missed the first part; I was pulling up the document for somebody to look at. It's not only Mr. Cedilote, the comments about the title, but there was a statement, I believe made yesterday, that after the 2005 Parks & Wildlife letter the TCEQ did nothing for three years.

THE COURT: That was the statement, as I recall.

MR. BENNETT: And this is clearly responsive to that.

THE COURT: All right.

MR. REASONER: And we'll -- obviously, we

don't have the five volumes here. We'll look at them and I'll predict we'll have some objections to some of that, but we'll look at it.

MR. WOTRING: So we're raising that issue now for the Court's attention. It's not going to come up this morning or perhaps today.

THE COURT: Okay.

MR. WOTRING: That is one issue. Then we had a couple other issues with regard to opening arguments and some of the Court's rulings on the motion in limine, as well.

MS. BAKER: Yes, Your Honor. The first one is, yesterday we believe the door was opened on the black liquor documents. Counsel for Waste Management told the jury the County has no evidence about harmful waste, toxins, or even waste being released. Of course, we do; but it got excluded. So we think it is -- we would like the Court to reconsider letting us use Exhibit 135. Having told the jury that we have no evidence of anything being released or hazardous, harmful waste, and excluding them, they can't now turn around and tell the jury, "Well, they don't have any evidence of harmful waste or anything getting out." We think that's prejudicial.

MR. REASONER: I'm not sure what argument

is being referred to there, if you were talking about me, counsel for Waste Management; but we can go back to the transcript. We're talking about Bedient and Pardue's testimony about a specific means of release on a given day, amount of release on a given day.

THE COURT: What you said about Dr. Bedient and Dr. Pardue was that they had the absolute -- they were absolutely imprecise in how the dioxin got out on any given day --

MR. REASONER: Correct. We're talking about the daily release.

THE COURT: -- which is consistent with what's been argued before.

MS. BAKER: We're arguing on Page 135. It says "What is the evidence the County is relying on? What they do not say is anything about dioxin, anything about harmful waste or toxins or waste even being from a paper mill or waste being released."

So I guess our point is, telling the jury, you know, the County doesn't have any evidence to rely on harmful waste, having kept them out, you can't hamstring someone by saying, "Now that we have kept it out, I'm going to tell the jury they don't have any evidence," because we do.

MR. REASONER: Sorry. As what counsel --

when we looked at it and recalled, what I'm saying is what the documents show, the two documents that are supposed to put Waste Management on notice. I had said neither of those documents -- that's the 1992 --

THE COURT: Yes. You are saying what that document does not say.

MR. REASONER: Of course.

THE COURT: I do remember that, because you said what is the -- let's look at what the County says. "What is the evidence that the County is relying on? You saw the two documents in opposing counsel's opening argument," and then you go through what these two documents say or don't say.

I don't think referring to what the documents say or don't say opens the door.

MS. BAKER: Just as a last final comment -- I understand what you said -- I think the overarching issue is when you exclude the evidence and then turn around and say, "Well, these two documents don't mention it," there are documents that do mention it. I feel like that is giving the jury the wrong impression. So I would like to, as we go forward, have an eye toward that type of thing. That seems unfair.

THE COURT: I do understand if you are going to raise an issue with regard to them referencing

things that have been kept out. This is specifically referring to what Waste Management should have known from the documents that they got when they got MIMC; and so I don't think that's the same issue.

I am sensitive to the point you are bringing up. And I think one of the things that would be helpful -- because I thought about this, as well, in terms of the time frame because, obviously, in all fairness to the County, the time frame starts at '73 because of the rulings of the Court. And while it's okay for you-all to say that's however many years after things were put into the pits, I think just be sensitive to the fact of talking about they don't have any evidence from 1973 on, and not reference the in-between time period, other than the fact that it's seven, nine years, whatever, after the pits. I think that will take care of that issue because, again, that's not your position. That's based on rulings I needed to make from an evidentiary standpoint. So I think as long as everybody is sensitive to that and focuses on that, that should take care of any potential problems there.

MR. SCHRADER: Your Honor, I need some clarification, I guess, because we're in trial now and the trial is going to be about admissible evidence. I hope we're able to argue that there has been no evidence

presented in this case on various issues, and that doesn't somehow open the door to evidence that's been excluded from the case.

THE COURT: I don't think it does in general; but because the case is based on the Court's rulings, it's going to be presented in the Charge as starting in '73. I think the important thing is to focus on the penalty period.

MR. SCHRADER: I understand that but --

THE COURT: And the penalty period is based on the Court's rulings, starting in '73. And I think that if we're clear about that when we're talking about the penalty period, I don't think that's a problem.

MR. WOTRING: And the argument is it's unduly prejudicial, unfairly prejudicial, in comparison to its probative value under Rule 403, then, yeah, I think they very much switched the scales on how that's weighed, depending on the arguments they make.

THE COURT: That can happen, and that's why I take notes and I'm looking at the transcript. I think it's a twofold issue once they're rulings of the Court. There is the prejudice issue. There is also relevance, because if I've made rulings, there are certain things that are no longer relevant. So I get both sides' view on that. I'm sensitive to it because, again, you-all

are following the rulings of the Court, whether you agree with them or not, and you shouldn't be hamstrung in certain situations. And so I hear where you're coming from on that and so I think the way to address that, for purposes of the record, is like I said, I don't have a problem with showing the time after the pits are closed. That's just a fact, but also be clear that you are talking about the penalty period.

And that may be helpful with our expert, as well, because obviously he has opinions from before then and so we need to focus in on the opinions that are relevant to this trial.

MR. SCHRADER: Understood. I'll offer up another example. There is not going to be evidence presented by the County as to the amount of dioxin released from the impoundment. I hope we're able to say there is no evidence presented on that --

THE COURT: That's a different issue.

MR. SCHRADER: Okay. Good.

MR. WOTRING: On the amount of dioxin.

THE COURT: Right. That's a different issue. It would be like -- it would be -- and you are not going to do this, but we're talking more on the lines of "and you have no evidence of anything happening between 1966 and 1973." If you say that to Dr. Pardue,

he's not going to agree with you.

MR. SCHRADER: I understand.

THE COURT: That's where we're going to get our little buzz phrase and have to take a break.

MR. SCHRADER: That's clear.

THE COURT: That's the kind of thing we're talking about, not other issues on -- that have been consistent throughout the case that you-all on both sides have pointed out you don't have evidence on. You are going to make that argument about the amount, they're going to make that argument about dredging.

MR. SCHRADER: Thank you, Your Honor.

MR. WOTRING: One final point. Counsel for MIMC said yesterday -- I'm looking at 110, and I have copies for everybody. This is a comment about dioxin and participating in the Superfund process. "The right thing is being done" -- quote, "The right thing is being done. The right thing is being done by IP and MIMC in working with the federal government, cleaning up and remediating the site." We think that creates the false impression that they did that willingly and voluntarily, without having to be compelled to do it under the UAO, opening the door.

MS. HINTON: Your Honor, I don't think that opens the door in any way. Looking at the stipulation,

we had the stipulation that we are working with the federal government with respect to cleaning up and remediating this site.

THE COURT: I remember when that was said, and I understand your position on that. I don't think it opens the door. I don't have a problem with reading that portion of the stipulation again that says "As required by federal law," which makes it very clear it's required by federal law. That's not a "they approached the EPA and said 'Why don't we help you.'"

MS. HINTON: That's right, Your Honor.

THE COURT: I don't think that opens the door to the UAO.

MS. HINTON: Thank you.

THE COURT: I will say that while it is okay for the defendants to reference the fact of the remediation and that you-all are working on it, that you need to be very careful not to make it look like it is a -- something where, one, you approached the EPA or, two, that it was completely voluntary, because I do think that -- if you say those words, that can create a false impression.

I know what you were saying in this opening and it's consistent with the stipulation; but to address the concerns that Harris County raised, I do not have a

problem with reading that portion of the stipulation again before we get into the evidence.

MS. HINTON: That's fine, Your Honor. That makes sense.

THE COURT: Mr. Benedict.

MR. BENEDICT: Very briefly, Your Honor. You may recall a couple of weeks ago we again discussed the State's position in the case and I was concerned about the shield and the sword.

THE COURT: Okay.

MR. BENEDICT: And I heard a lot of references to the government yesterday, including statements to the effect of Harris County and the TCEQ are overreaching in this case. I'm entitled to respond to those things, and I just wanted to get that out there. I don't know that I will be putting witnesses on or whatever, but at closing or at some point in time I'm entitled to respond to those positions.

THE COURT: I think it's tricky because some people said it that way, and then somebody else referred to the TCEQ as a nominal party.

MR. BENEDICT: And that's also incorrect, but --

THE COURT: I know, and we talked about that before. So I think the proper way to handle that

is as long as everyone is consistent with the position, which is you-all are here as a necessary party, then I think hopefully that clears up the issue. That was in opening, and now this is going to be how the case is presented. I'm not saying you can't respond. I would have to hear what it is you want to say, but I think it's advisable for all of us to be clear that your position here is as a necessary party and you are separate from Harris County.

MR. BENEDICT: And, Your Honor, as we go along, I'm sure we'll talk about it again, but I think I'm entitled to respond. I don't have the transcript, but in particular there were statements that TCEQ did nothing for three years.

THE COURT: When there are statements about TCEQ, you are entitled to respond to those.

MR. BENEDICT: And they specifically said Harris County and the TCEQ are overreaching on penalties. They didn't say -- that wasn't just a general reference. They specifically named both parties. And so I'm entitled, I think, to address those. I just wanted that out there.

THE COURT: You may well be. I think, based on what we all discussed before trial, that everybody needs to be sensitive to separating that out.

MR. BENEDICT: Yes.

THE COURT: But, yes, I think when people make statements directly at the TCEQ, you are able to respond to that.

MR. BENEDICT: After I've reviewed the transcript, I'll have more specific --

MS. HINTON: Your Honor, Mr. Wotring indicated some documents he wants to use. Are those for use today?

MR. WOTRING: I don't --

MS. HINTON: 216, Your Honor. Defendants' 216 has nothing to do with --

MR. MUIR: Plaintiffs' 215.

MR. WOTRING: 216.

MS. HINTON: 216 -- I'll get it right in a minute -- has absolutely nothing to do with the impoundment and the facility at issue in this lawsuit. This is dated August 5th, 1965, and it relates to the southern facility, which MIMC didn't operate in, and it has quantities of sludge, et cetera, that have been shipped down to Basin B. This exhibit has, as far as I can tell, nothing to do with the northern impoundment because MIMC hadn't even been incorporated and started operations as of August 5th, 1965.

I think they may be attempting to use this

to quantify the amount of sludge that they're going to allege within the northern impoundment, the site at issue; but this letter has nothing to do with it. MIMC hadn't even been formed.

MR. WOTRING: This document is preadmitted.

MS. HINTON: Well, if it's preadmitted, I'm objecting to its use. It has nothing to do -- and I would say it's totally irrelevant, it's very prejudicial, and it's the wrong impoundment.

MR. WOTRING: The first document, if we're talking about the 1955 letter, is Exhibit 43.

MS. HINTON: I'm sorry. I'm just on 216 for now.

MR. WOTRING: 216 is preadmitted.

THE COURT: This is Plaintiffs' 216. This is an August 5th, 1965 document.

MS. HINTON: And if we need to agree on redactions, we need to sit down and agree on redactions; but this letter is talking about the facility south of Interstate 10.

THE COURT: Is this letter referring to the southern impoundment?

MR. MUIR: Your Honor, in reference to the Court's -- the discussion on preadmitted exhibits -- and this is from Page 88 of the transcript on 10/15, Your

Honor said, "All right. The following exhibits are admitted," goes through it. Gets down to 187, 211, 211A, 216, 217, 221, 222 through 289. They were preadmitted with no redactions. So we come in at this time to use it with this witness and now they want to go back on an agreement on preadmitting exhibits.

MS. HINTON: Well, Your Honor --

THE COURT: I still have a question: Is this about the southern impoundment?

MR. WOTRING: Your Honor, can you --

THE COURT: Oh, sorry. (Screen lowered).

And the only reason I raise this is because we have an agreement in this trial that we're not talking about the southern impoundment. So that's why I raised the question.

MR. WOTRING: This is talking about the production of sludge at the mill, and we do calculate the amount of sludge going into the impoundments, in part, using this document.

MS. HINTON: But it couldn't be this impoundment. MIMC wasn't created yet and shipments sent to this site --

THE COURT: Just a moment. You can't both talk at the same time.

I think what Mr. Wotring is saying -- he's

not saying the amount of sludge that was put into this impoundment. He's saying the amount of sludge that was generated from the plant is what he's offering it for.

MR. MUIR: And, Your Honor, there were other documents which specifically talk about these basins and how much they held. So taking -- taking that information, along with this information, is how you get to how much went to the northern impoundment pits. So it is part of a combination of documents which are needed to come up with how much went to those impoundments.

THE COURT: So just to be clear, Mr. Muir, you are saying there are documents that show how much waste -- how much sludge went from the plant, and then there is a document that shows how much went into the southern impoundment, and from those two things you extrapolate how much went into the northern impoundment? Is that what you are saying?

MR. WOTRING: No.

THE COURT: Okay.

MR. WOTRING: Documents from the plant and then documents about the pit is how you do it.

THE COURT: I understand. But this is about a different pit. And the reason you are getting an objection is if it is about the southern impoundment,

then it wouldn't be relevant to any expert opinions in this case as to any of the waste that's alleged to have gotten out adjacent to or in the San Jacinto River in this case.

MR. WOTRING: We can read through it. It's talking about the contract that was assigned to MIMC, and it's talking about the contractor having trouble getting to the site. And Ole Peterson is the firm prior to MIMC. It's talking about this site.

MS. HINTON: No, Your Honor. MIMC hadn't been formed. The contract hadn't been assigned. The impoundment at issue in this case hadn't been started for sludge to go into it. He's saying this document relates to the MIMC operations. It absolutely does not. MIMC hadn't even been formed.

THE COURT: I understand. Okay. I think what Mr. Wotring -- whether it's related to MIMC's operations or not, the question is: Is this document talking about what is put into the southern impoundment? That's my question.

MS. HINTON: Yes.

MR. WOTRING: Here is a hard copy of the document (document tendered).

MR. CARTER: The answer to your question is yes, Your Honor --

MS. HINTON: Yes.
MR. CARTER: -- because it's been established that the first disposal into this site did not start until September of '65 with no --
MR. WOTRING: No.
MR. CARTER: Excuse me -- with MIMC. And that disposal operation ended in May of '66. That has been the period of time. There is no dispute about that.
MR. WOTRING: No. There is clearly a dispute. Ole Peterson put sludge into this site prior to MIMC being in existence.
MR. CARTER: There is absolutely no evidence to that.
MS. HINTON: There is no evidence.
MR. WOTRING: I can put that on the stand.
THE COURT: You believe there is evidence that Ole Peterson put sludge into these pits at issue in this trial before MIMC was involved?
MR. WOTRING: Yes. I'll lay the foundation for this document.
THE COURT: And who are you going to lay the foundation through?
MR. WOTRING: With Dr. Pardue.
MS. HINTON: No personal knowledge, Your

Honor. It would be hearsay.

MR. STANFIELD: Your Honor, Dr. Bedient is the corporate rep who testified the time period of operation at issue in this lawsuit was September 13th, 1965 to May 10, 1966. That is the binding position of Harris County as given through its corporate representative.

MR. WOTRING: I --

MR. STANFIELD: Earnest, I'm not finished. Please stop cutting us off.

So I'm going to try to pull that out for us to consider as we talk about this issue.

THE COURT: I think that is different from what Mr. Wotring is saying. He's not saying that the time period isn't that time period. What I think he's saying now is that he believes that Ole Peterson put some sludge in the northern impoundment prior to MIMC.

MR. WOTRING: How about I lay the foundation with other documents, and when we get to this point, and we'll probably be at a point we can address it with the foundation.

THE COURT: I'll let you see if you can lay the foundation to connect it up. You understand what my concern is. As long as it's talking about the northern impoundment, it may be relevant. But if we're talking

about the southern impoundment, we've all agreed that's not part of this case and I don't think what is in the southern impoundment, unless you can link it up, would be relevant to the allegations of the amount of waste in the northern impoundment. So I'll let you lay the foundation.

MR. WOTRING: Then Exhibit 43 has also been preadmitted.

MR. STANFIELD: With a redaction. Page 4, Your Honor, there is a reference --

Jen, do you have control?

Let's go to Page 4, under Paragraph No. 2 in that second one, there was a reference to the black liquor operation at about the bottom third. That needs to come out.

THE COURT: Okay.

MR. STANFIELD: That's all I'm asking for.

THE COURT: So just to be clear for purposes of what I'm going to read to the jury before we start, I'm just going to read the first two sentences of the stipulation.

MR. WOTRING: Harris County would not request that.

THE COURT: You do not want that?

MR. WOTRING: No.

THE COURT: Okay.

MS. HINTON: Your Honor, the corporate rep's testimony, I'll let Mr. --

MR. STANFIELD: So what he's saying is -- this is John Pardue, actually, on 116 of his deposition, starting on Line 4.

MR. CARTER: Corporate representative?

MR. STANFIELD: This is March. I believe this may be as an expert. "It is my contention that on or after September 13th of '65 is when waste first began going to the northern pits that belong to or that had been developed by Mr. McGinnis." "First began going."

MR. WOTRING: That had been developed by Mr. McGinnis. Again, we'll lay the foundation when we get there, when we get there, or not.

THE COURT: I'll let you lay the foundation. If we need to take a break once we get to that document, we will.

MR. CARTER: Judge, if I may, because of the way this is getting sorted out, I would ask that the foundation even be laid outside the presence of the jury, since we don't know what foundation he can possibly lay to establish that.

MR. WOTRING: In all fairness, this is a preadmitted exhibit that they are now objecting to.

THE COURT: I understand, and I'm aware of that. For my purposes, the only thing I'm concerned about is whether or not it's talking about a pit that's not part of this trial. That's my concern, whether the document has been admitted or not.

And if that's not your intention, then I'm going to see how you link it up to the northern impoundment.

MR. WOTRING: That is not my intention. And I think we've been very clear that the southern impoundments are not part of this case.

THE COURT: You have. That's why I'm asking that question, because to me, that's the only thing that's relevant at this point with regard to these documents.

MS. GRAY: Your Honor, I just want to point out that even Dr. Pardue, on Page 7 of his report, writes "By September 1965, MIMC had constructed approximately 12 acres of waste pits on the site adjacent to the San Jacinto River just north of I-10. These pits were filled via barge loading and unloading operations conducted between September 1965 and May 1966."

It seems like we're just going off on an excursion now to try to confuse the jury with regard to

when waste -- Harris County's position as to when waste was going into the northern impoundment pits.

THE COURT: How soon do you think -- thank you, Ms. Gray -- do you think you're going to get to this issue? I'm trying to decide if it's something where we can get you going, take a break, lay the foundation outside the presence of the jury, let you-all take a break and go back into court.

MR. WOTRING: Yes. I think we have plenty of time, and I'm not able to confuse the jury before I ask my first question.

THE COURT: Are we ready to go, other than that issue? So what we'll do is get going with the first witness, and we'll take a break, we'll start our break with laying the foundation for this document and then let you take a break. And then bring the jury back in, once I rule. With that, we'll line up the jury.

(After a break, the jury was present and the following proceedings were had:)

THE COURT: Good morning. Please be seated.

Thank you for your patience, ladies and gentlemen, while we dealt with some evidentiary matters. We're now ready to proceed.

Mr. Wotring, call your first witness,

please.

MR. WOTRING: Yes. Harris County calls John Pardue to the stand.

THE COURT: Dr. Pardue, raise your right hand to be sworn, sir.

(Whereupon the witness was sworn)

Please be seated. There is water there for you if you need it.

You may proceed.

MR. WOTRING: May I proceed from the podium, Your Honor?

THE COURT: Yes, sir.

JOHN PARDUE, Ph.D.,

having been duly sworn, testified as follows:

DIRECT EXAMINATION

QUESTIONS MR. WOTRING:

Q. Would you please tell us what you do for a living, Dr. Pardue?

A. I'm a professor of civil and environmental engineering at Louisiana State University.

Q. And I think we have a copy of your resume. Do you call it a resume or do you call it a CV?

A. CV.

Q. What is the difference?

A. I don't know.

MR. WOTRING: If we could pull up Exhibit No. 291.

Q. Does that list your educational background, your employment history, kind of sketch what you've done in your professional career?

A. It does.

Q. Where do you live?

A. I live in Baton Rouge, Louisiana.

Q. Are you married?

A. I am.

Q. Do you have kids?

A. Three kids.

Q. Do they all still live with you?

A. They do.

Q. All right. And what type of engineering do you do?

A. Environmental engineering.

Q. And how would you describe to somebody you just met at a party what environmental engineering is?

A. We stand between the activities of humans and the environment to try to make sure there is no effects of humans on the environment.

Q. So when did you start your training as being an environmental engineer?

A. Back in the mid '80s.

Q. And where did you start?

A. I did a biology degree at Rhodes College in Memphis and then a master's in marine sciences and started my civil engineering training at LSU and finished that Ph.D. up in 1992.

Q. Okay. So what have you been doing since 1992?

A. I have been at LSU in one role or another, doing teaching, research and service.

Q. Okay. I think, if we can find -- I'm going to give you the laser pointer. We'll just go through the top few lines on your CV. Way up at the top is fine. The first line there says "Director of the Louisiana Water Resources Research Institute." Do you want to orient everybody about that with the laser pointer?

A. Okay. There (indicating).

Q. What do you do as the director of the Louisiana Water Research Institute?

A. There's one of these entities in every state, and there's even one in Guam and Virgin Islands. And what we do there is try to work together across states or within our state to understand water issues in the state. And we have a little money from the federal government that we give out to faculty to do research. So, for example, we did work on Hurricane Katrina, the water impacts of that, for example, when that occurred

in Louisiana.

Q. And what do you do as the director there?

A. So I coordinate all the programs. I have a system by which I give the money out. And we also do our own activities, trying to organize research activities for the state water programs.

Q. What's the next line on the top part of your CV?

A. It's another research center. It's Hazardous Substance Research Center, South and Southwest that I co-direct.

Q. And what do you do as the co-director of that center?

A. We primarily work at sites like the one in question here. We research better ways to clean the sites up, which is what my area of research interest is. So we work at hazardous waste sites all over the country and try to develop new and cheaper methods, better methods for cleaning them up faster, basically.

Q. The next line I get, Louisiana State University. After that it says you're the professor of civil and environmental engineering, the Elizabeth Howell Stewart Professor?

A. Yes.

Q. What does that mean?

A. That means I have an endowed chair that's named after a lady who donated some money to the university.

Q. And do you have tenure at LSU?

A. I do.

Q. And what -- would you tell us what that means?

A. Tenure is a system by which we have a seven-year probationary period when we first get hired on at the university. And we do all the work that is in resume -- teaching, research, and service; and then at the end of -- at the end of that period, they evaluate you, whether you met a certain standard. And then if you don't, you have to leave; and if you do, you get to stay.

And what it essentially gives is academic freedom. I can work on, like, a controversial case like this or a site like this, and I can make that decision, if it's in the interest of my research program. I don't have to ask permission if I can work on certain problems or not. It's an academic freedom issue.

Q. You bring up an interesting point. You're not working for LSU here today?

A. I am not.

Q. And you are not speaking on behalf of LSU in any way?

A. No, I am not.

Q. So you are just speaking on behalf of John Pardue?

A. Me, personally, correct.

Q. And what does LSU think about you doing this type of activity? Do they object to it?

A. No. The engineering college -- of course, we're teaching students to be engineers, so I don't do a lot of this expert witness work. But when I go out and am asked to help at a hazardous waste site or make decisions about it, they want me to practice, so when I turn around and teach a student, I'm not just someone who is in the lab or in my office all the time; but I'm actually out. They try to get us out a day a week. That is the kind of guidance we have.

This is one of the activities. But I'm not normally in these court situations, but it's one of the type of activities. I have to fill a form out that tells them what I'm doing, so they will know. But that is the system that we have for doing this type of outside work.

Q. And what do you do with respect to teaching undergraduate students at LSU? Do you?

A. I do. I coordinate the undergraduate environmental engineering program. We're the only program in the Central Gulf Coast. We attract students

from this state, from Louisiana, from Arkansas, California, who want to study environmental engineering, and I coordinate that program for the university.

Q. And have you ever worked on any sites that involved dioxin before?

A. I have.

Q. Would you tell us about those sites?

A. The one site that I'm working on now is the Passaic River in New Jersey. So that's in Newark, right outside kind of the shadow of New York City. And it's -- the river was kind of the start of the industrial revolution of the United States, a very polluted river. And they have a dioxin problem. And I've been -- I'm coordinating a large field study to try to develop a new cleanup technique for the sediment from that river. That's one of the largest Superfund sites in terms of cost in the country. So I'm coordinating a study with Texas Tech and Rutgers and LSU to develop a new method of cleaning up those sediments.

Q. And have you done any sort of work on other contaminated sites?

A. Yes.

Q. Would you please describe some of that work, in addition to the Passaic River work?

A. So I tend to bounce around at Superfund sites

that involve wetlands in some way, because I'm from Louisiana. We contaminate a lot of wetlands. The petro processor site is in Baton Rouge. I've been working there for 20 years. It's a site similar in setup to this site. It was pits that -- a man owned some land and he built some levees around a piece of low land and then invited industry to come in and dump chemical waste into those pits. And some of that leaked out and so we've been researching ways of cleaning up the pits that remained.

I worked at the Aberdeen Proving Ground, which is in Maryland. It's an Army base. And that's where the U.S. developed all their chemical weapons. So they had lots of activities out there that involved chemicals. So I've helped them clean up locations.

And the Resolve Superfund site, which is in Massachusetts, they're actually using a technology that I developed in my lab to do the cleanup of that site. So I'm up there quite a bit, on the phone with them every week to make sure that what I proposed is actually working. Those are three examples.

Q. Have you -- what did you do your master's thesis on?

A. I worked on PCBs and dioxin, the chemical that's involved in this case, and looked at ways in

which they broke down, which they degraded in the environment and how stable they were, et cetera.

Q. And how would you describe dioxin? What kind of chemical is it?

A. It's a chlorinated -- because it has chlorines on it -- it's chlorinated and we call it hydrophobic. It tends to get out of water. It doesn't want to tend to be in water. And it's an organic compound, so it's made of carbons and hydrogens. And it has these chlorines, as well, on the structure.

Q. And if you are using it in the lab, is it considered a hazardous substance?

A. Yes, yes. You have to use controls and things when you are using it in the lab.

Q. Have you also used hexachlorobenzene in your work?

A. Yes.

Q. And why -- is there any relevance between your work with hexachlorobenzene and the analysis of dioxin?

A. Well, at this petro processor site that I talked about, that is a waste product, similar to dioxin, of industrial processes and industrial -- it's an industrial waste. And so it was in these pits and leaked out, and it behaves similarly to dioxin in the environment. So at this site, the petro processor site,

we tracked where it moved, et cetera. We also used it as what's called a surrogate or a substitution for dioxin, because it's a little easier to work with. It's not as hazardous to the students. So we used it as a -- just a thing that we can substitute in for studies instead of the dioxin.

Q. And why -- why can you use it instead of dioxin for your studies?

A. It has similar water solubility. It tends not to want to be in water. It has chlorines. It behaves similarly in the environment to dioxin.

Q. You used a term -- what does "water solubility" mean?

A. That means how much of the chemical will go into -- into water, what is the -- what is the mass or how much of it will go into water.

Q. Give us something from our day-to-day life. What is a high soluble compound?

A. Like when you're putting sugar into tea, you'll keep adding sugar, adding sugar, eventually it collects at the bottom. It won't dissolve any more, so you reached the limit of the solubility that's there.

Q. What is a low solubility?

A. That means it -- it just -- just a fraction or a small amount of it.

You'll see it collect at the bottom of the container instead of dissolving into the water, itself.

Q. So is solubility the tendency of something to be dissolved in water?

A. It is. Yeah, that's the definition.

Q. And how do you compare the solubility of hexachlorobenzene with the solubility of dioxin?

A. They're pretty similar, yeah. They're very, very sparingly soluble.

Q. So why would you use hexachlorobenzene in your lab instead of dioxin?

A. Just as a safety issue with the students.

Q. Okay. Have you published in the field of environmental engineering before?

A. I have.

Q. And would you talk about the different articles that you've published?

A. I've published about 60-plus, more than 60 peer-reviewed articles. So I write about -- when I go to these sites or I do experiments back at the lab, I'll work with a student and do a set of experiments, either in the field or in the lab. We'll write that up, and then we send that off to a journal, like a magazine, but it's a little different. No one reads it, is the first reason.

The second thing is that it -- it -- it's peer reviewed. So they send whatever I submit out to other professors or experts, like myself, and they criticize what I did. They write comments. Then I have to either -- they either accept it or they reject it, and I have to respond to their comments. So it's a really rigorous kind of peer-review process.

Q. Okay. And do you serve as a peer reviewer for journals?

A. Right, yes. So if I submit and make other people look at my work, I have to return the favor and participate in that process, as well.

Q. So what kind of journals do you review articles for?

A. All of the big ones in our field, "Environmental Science & Technology" is one, "Chemosphere." I just got a notice to review an article today on biodegradation this morning. So I'll get one of those notices every couple of weeks.

Q. And have you conducted any environmental engineering studies on wetlands and marsh areas in the Gulf Coast, Louisiana and Texas?

A. Yes. So I have been -- obviously, this petro processor site is a wetland site. I have worked at other sites and been in marshes. I have been very

involved in the Deepwater Horizon response. I work on how better -- in the marshes that have been oiled, how do we clean that up. So I have been there, to the coast, over a hundred times since the spill. So that's been a big part of my efforts over the last four years.

Q. Okay. And let's get to your work in this case. What generally were you asked to do in this case? Let's start with who asked you to do it.

A. You did.

Q. Okay. And what did I ask you to do?

A. You asked me to do two things. You asked me to look through the historical documents. We have a lot of old records here from the plant and from correspondence back and forth of various people. So I was asked to sort of develop a timeline, what things happened when, who was involved, you know, why did they make that decision. So develop a historical timeline was the first thing you asked me.

And the second thing you asked me was to help understand the processes by which dioxin left the pits, so what were the different mechanisms by which the waste that was there could leave over the time period that is of interest in this study.

Q. Okay. And what -- what documents did you look at, or what information did you have in doing your work

in this case?

A. So I had these historical documents. They saved a lot of records, so I had all of that. And that was memos and diagrams. I had a lot of aerial photography. I had some regular photography. And so all of that information was there, the historical material.

Then I had all of the data that's been collected out there in the past, you know, 15 years as they have been studying the site. That was done by the consultants working for the parties involved in this process, and also a study that the University of Houston did, for example, and they took samples near the site. So I reviewed that work.

And then the third thing is just the scientific literature in general, just any kind of a paper that was done on a similar site that was relevant to the -- to the processes that we're talking about here.

Q. And are you being paid for your time here, sir?

A. I am.

Q. And how much are you being paid and how are you being paid?

A. You pay me. And I get paid $250 an hour for the work that I do.

Q. And how much -- how many hours have you spent on this case?

A. I have worked about 200 hours so far on this case. And I guess with all of my travel and everything together, I have been over here probably more than a dozen times, I have made about $54,000.

Q. Again, that goes to you, it does not go to LSU, correct?

A. Correct.

Q. Well, let's talk generally about your opinions in this case. Were you able to determine how the process operated by which sludge from the plant was sent to the impoundments?

A. I was.

Q. Okay. In your review of the information, did you see any indication that sludge from anywhere else came to -- went to the impoundments other than sludge from the Pasadena plant?

A. No. I think all the sludge that's in that -- in those pits is from the Champion Pasadena plant.

Q. And is -- is there waste from any other source in those pits that we're here about, other than from the Champion Pasadena plant?

A. I found no information that anything else is there but the waste from the Champion plant.

Q. And let's just make sure we're talking about the same thing.

MR. WOTRING: Could you pull up Exhibit No. 31?

Q. And what is Exhibit No. 31?

A. That's a 1966 aerial. So an overflight in a plane, taking pictures of, you know, the whole area; and those are the waste impoundments. As you see, they're just north of the I-10 bridge there, the San Jacinto River and the west side of the river.

Q. So when you and I are talking about the impoundments, you and I will be talking about those on this picture. Is that all right?

A. Yeah, those three, uh-huh.

Q. Where do you see three and why do you see three?

A. So this is the -- this is the most western one here (indicating), so we'll call that 1. And then we have kind of a small one in the middle here, an impoundment, and then we have kind of an inverted C, which is on the outside. To keep things simple, I'll say 1, 2 and 3, just to go left and right.

Q. Say that again. Which one is 1?

A. This one is 1. I'm outlining it with a pointer. There is a berm, like a levee in between here

(indicating).

Q. Let's stop right there. What is a berm?

A. A berm is an earthen structure, so soil pushed together to make a little wall to kind of separate two -- you know, two systems or two bodies of water, for example.

Q. Is there a difference between a berm and a levee?

A. I'm sure there is. I'm using them interchangeably here.

Q. So we can talk about berms, we can talk about levees?

A. Right.

Q. So which one is the first one again?

A. This one (indicating), on the most western side.

Q. Which one are you going to call Pit No. 2?

A. I'm going to call this internal -- this one on the inside here Pit No. 2.

Q. Which one are you going to call Pit No. 3?

A. I'm going to call this one that is kind of an inverted C-shape, this outside one is Pit No. 3.

Q. Okay. We're going to do that one more time and then we're not going to do that again.

A. Okay. Good.

Q. Tell me which one is Pit No. 3? Which one is it?
A. This one (indicating).
Q. Where is Pit No. 2?
A. In the middle.
Q. And where is Pit No. 1?
A. There (indicating).
Q. So we're talking about the pits? We're talking about 1, 2 and 3, right?
A. Correct.
Q. We're talking about the impoundments? We're talking about all of them together?
A. Yes.
Q. And when we're talking about Pit 1 or Pit 2 or Pit 3, we're meaning that one pit?
A. That's correct.
Q. All right. Well, were you able to calculate how much sludge went into the impoundments?
A. Yes. They kept good records because they were paying a contractor to move this material. So they had a way of calculating the amounts that they moved, which was actually really useful for figuring out how much left the plant and went here. So all of that information is available, even in multiple different forms. So that was relatively straightforward to know

how much material actually went to the impoundments.

Q. And when you looked at all the information, did you calculate how much sludge went into the impoundments?

A. I did.

Q. And how much was it?

A. Somewhere between 125,000 cubic yards and 130,000 cubic yards.

Q. A cubic yard is what?

A. A 1 yard by 1 yard by 1 yard box.

Q. And so it's a 3-foot box?

A. 3 feet by 3 feet by 3 feet, yeah.

Q. And so have you calculated how many -- we were trying to figure out how to explain that, and you came up with the idea of an Olympic swimming pool?

A. Right. When I say "Olympic swimming pool," an Olympic swimming pool is about 50 yards long and 20 yards wide and 6 yards deep. So that would be -- we're talking about 125,000 cubic yards, that's 38 pools, just to get that volume in mind.

Q. So when they used these pits, they filled them with 38 Olympic sized pools filled with sludge?

A. Correct.

Q. And the -- is "sludge" the right term?

A. It's actually sludge mixed with more water.

I'm just talking about the sludge part now, not the water. They had to add more water to move it, so that's in addition to the sludge.

Q. They started out with 38 pools of sludge?

A. Right.

Q. And then you had to add water to it?

A. Right.

Q. To get it to the impoundments?

A. Exactly.

Q. We may be getting ahead of ourselves. Is "sludge" the right term to use?

A. Yes. That's an industrial waste term we use in, you know, water treatment systems like was used at the Champion plant. So "sludge" is the term.

Q. Now let's back up to the Champion plant. What kind of plant was it?

A. It was a kraft paper mill.

Q. What does that mean, "kraft paper mill"?

A. Well, the kraft process is still in general use today, with some modifications; but you bring a tree to the property, you take the bark off, you shred it into little chips, you put that into a cooker and add something called white liquor. White liquor is a mixture of caustic soda, which is a base, and sodium sulfide, two chemicals. It has a white color. And you

react that with the tree.

Q. Okay. And then it breaks down in some waste products?

A. Right. Yes. You get some waste products there and you get the fibers that go to make the paper. That gets bleached, and that's what it does.

Q. Let me walk you through this a little bit. The fibers go on to make the paper?

A. Right.

Q. They get compressed and then they get bleached --

A. Yes.

Q. -- and turn white, like this, right?

A. Right.

Q. So you take the fibers and you press them -- at the end of it, you get paper like this?

A. Paper or cardboard.

Q. Paper or cardboard?

A. Right.

Q. And what you are left with are some waste products, including sludge?

A. Right.

Q. Okay. And when you -- how does this process work? Does it use a lot of water?

A. Yeah, paper mills use tremendous amounts of

water. This plant used 26 million gallons of water every day. And if we're using our Olympic swimming pool analogy again, that is around 34 Olympic swimming pools every day that ran through the plant.

Q. And at the other end, you would get -- does it work in a continuous process?

A. 24 hours a day, 7 days a week.

Q. So if it shuts down, is that a big deal or a little deal for a paper mill plant?

A. It's a big deal.

Q. Okay. And so at the end of this process, you get waste materials, including sludge, right?

A. Yes. The water has to be -- you can't just throw the water out into the environment, you have to treat it. So at the time the treatment was you'd run it through a basin, kind of a big swimming pool, think of it that way. The water would slow down. And then the particles that are in the water, including the fibers that were left over as waste or bark pieces or other chemicals, would settle out to the bottom of that basin. And then they would take that solid material, that waste, and pump that into another series of very, very large basins. And those are many acres in size, and essentially that would hold the same amount that were moved to the plants, so 135,000 cubic yards, which is

the 38 swimming pools. So that's how much they would leave that there. It would be a couple years worth of stuff that would be in these larger basins.

Q. Okay. And the sludge at the plant before it was sent to the impoundments, what was it like? We've got some documents, but what was it like, generally?

MR. SCHRADER: Objection, no personal knowledge.

THE COURT: Please rephrase.

Q. (By Mr. Wotring) Based upon your review of the information in this case, were you able to formulate an -- formulate an opinion about the characteristics of the sludge at the Champion Pasadena paper mill?

A. Yes.

Q. So would you tell us, based upon your review of the information, about what that sludge was like?

MS. GRAY: Objection, Your Honor. No foundation with regard to his expertise in paper sludge.

THE COURT: All right. If he's referring to a particular document, I think that's fine, based on his review; but I think if anything goes beyond that, then we need to address that separately.

Q. Well, let's look at Exhibit No. 43.

MR. WOTRING: May I approach?

THE COURT: Yes.

(Documents tendered).

MR. WOTRING: I've got six.

MR. REASONER: These have your notes.

Q. (By Mr. Wotring) All right. Have you seen Exhibit No. 43 before?

A. I have.

Q. Let's walk through Exhibit No. 43. The document is from September 21st of 1955, right?

A. Yes, it is.

Q. And let's talk about this document. What -- what does it tell you about the sludge?

A. It's a letter between two people that worked at the plant. And it gives -- it's essentially sort of brainstorming methods of disposal of this material. And as part of those brainstorming process, the sludge is characterized and measurements are made on it to identify its properties.

Q. Does it talk about what kind of consistency the sludge is at the plant?

A. It does.

Q. And where is -- where would we find that information about sludge at the plant?

A. You would go to the second page, about two-thirds of the way down. Right there would be great (indicating).

So the sludge that's in these first swimming pools -- I was talking about the primary basins -- this is the stuff that has to get cleaned out first.

Q. This is stuff at the plant?

A. At the plant, right. It's 93 percent moisture and 7 percent solid, so it's a very wet material. That is put into the secondary basins that we're talking about. As it sits, what happens, it compresses. So the solids there, you know, you are leaving it in there for years, a couple of years. The solids settle down and the water at the top remains, and that water was discharged to make more room for more sludge to settle.

So think of a process where you load a very kind of wet mix of water and solids. It settles down, they pump the water off and add the next day's version, the next day's version, so forth and so on.

As it sits, it goes to about 56 percent moisture. So it's still mostly water, but it's -- but it's a solid, kind of a fibrous material that is a mixture of water and solids.

Q. Okay. And that's what it was like at the plant?

A. Yes.

Q. Okay. Well, let's go back to the first page of

Exhibit No. 43. Now, you were talking about two people were having a conversation. Who are the two people here?

A. Well, Talboys, I think at the time --

MR. SCHRADER: Objection, no personal knowledge.

Q. (By Mr. Wotring) Have you seen documents reflecting who Mr. Talboys was?

A. Yes.

Q. And who was Mr. Talboys, based upon your review of the documents provided to you in this case?

A. He was a worker at the Champion plant who was responsible for this particular aspect of the plant.

Q. And who -- who -- do you know who Mr. Chase is?

A. I do not.

Q. Okay. And what is Mr. Talboys discussing in this memo, generally, based upon your review of it?

A. Well, these basins would fill. And so what Mr. Talboys is discussing is how will we unload this material and take it off site because we're -- once the basins are filled, there is no more room and the plant will shut down. So they're working through various options of where to take this sludge material.

Q. Okay. Let's read the first paragraph there to kind of orient ourselves. What does it say?

A. "A survey has been made of the possible ways by which sludge collected in our settling basins might be disposed of permanently. The various methods are tabulated below, together with the volumes of sludge involved and approximate costs of transporting the sludge to hypothetical disposal sites."

Q. And then it lists the different methods of disposal. And just one of them is "pumping of wet sludge to spoil area." There is "pumping of wet sludge to barge and disposal at sea," correct?

A. Correct.

Q. And then it's talking about "barging of drained sludge to the sea" as well?

A. Correct.

Q. Let's talk about what the next paragraph says. Why don't you read that for us?

A. "Hauling drained sludge by rail to a land disposal site 50 or even 100 miles distant appears to be cheaper than either trucking the sludge to a similar distance or barging it to sea for disposal."

Q. Okay. And what does the next sentence say?

A. "Furthermore, it is unlikely that dumping of sludge any closer to shore than 110 miles," which is a "(400 fathom depth) would be approved. However, costs of handling sludge both at the mill and at the disposal

site, cost and availability of land, and other details must be investigated fully before any conclusions can be drawn."

Q. So let's go back up to the top of this document. And this is dated September 21st, 1955. And remind me what year the filling of the -- the impoundments that we're here about took place.

A. We're talking about a decade later in this particular matter.

Q. So this document is 10 years before the filling of the impoundments?

A. Correct.

Q. All right. And what does Champion know about the sludge, based upon Exhibit No. 43, if they wanted to dispose of it at sea?

MR. SCHRADER: Objection, calls for speculation.

MR. WOTRING: I believe that the answer -- well, I'll rephrase.

THE COURT: All right.

MR. WOTRING: Would you go to the paragraph below the table and blow it up?

Q. (By Mr. Wotring) So in this internal Champion document, it states that "It is unlikely that dumping of sludge any closer to shore than 110 miles (400 fathom of

depth) would be approved." This is a statement from an internal Champion document in September of 1955, right?

A. Yes, it is.

Q. Okay. And did this document provide you with information in formulating your opinions about how -- how much sludge was placed into the impoundment?

A. Yes. There is lots of information here, both on the quality of the material and the amounts that are produced on a daily basis.

Q. Well, let's talk about the quality of the material. Which portion of this document discusses the quality of the material?

A. If you'll go to the second page at the top --

Q. Yes.

A. -- this first top part is analysis that was done just to see whether it would be used as a fertilizer; so does it have any nitrogen in it that you could give it to a farmer and mix it in with the land and use it as a fertilizer. And the analysis concluded that it had little fertilizer value.

If you'll go up a little bit, so this second set of analyses is sort of the gist of what is in the material. This first one is essentially calcium carbonate. It's limestone and it's an inert material, but it's 43 percent of the sludge.

And then volatile matter present, that's -- that's the organic part, the fiber that is present in the waste material.

Q. And based upon your review of the documents in this case, do you have an opinion about what the word "volatile" means in that context as used in Exhibit No. 43?

MR. SCHRADER: Objection, calls for speculation. I have another objection, if we could just approach briefly, Your Honor?

THE COURT: Yes, sir.

(Whereupon, after a bench discussion outside the hearing of the reporter and jury, the following proceedings were had:)

THE COURT: Ladies and gentlemen, we're going to give you a quick break while we address an issue. We'll bring you right back in.

(Jury not present)

(Whereupon, the witness left the courtroom)

THE COURT: Please be seated.

Okay. As I understand the objection, the objection is that this is a document from 1955 that references the composition of sludge back in to the '40s and that the defendants believe that the testing that was done on the actual material that was hauled from the

plant to these pits is in conflict with that. Is that the objection?

MR. SCHRADER: The objection is --

THE COURT: So, therefore, there is no evidence that the sludge was of the same composition at this time.

MR. SCHRADER: Correct.

THE COURT: Mr. Wotring. I must admit, I have not compared the two documents, so I don't know what the difference would be.

MR. WOTRING: Well, I'll ask the witness from the stand if they're the same. If not, I'll move on.

MS. GRAY: Your Honor, our objection is there is no foundation that has been laid that he is an expert in the paper-making processes and how it changed from 1947 to 1965.

THE COURT: That's true. I don't think he's intending to present himself as such an expert, is he?

MR. WOTRING: Only in the sense that he's going to be asked questions about the process at the Pasadena plant and whether the sludge had been the same as the sludge in '65.

THE COURT: So how do we deal with the

objection, if that's accurate, that the testing of the material is in conflict with what that document shows of sludge that dates back to the '40s? How do we address that? I mean, I don't mind if you ask him that question, technically, do the two documents say the same thing. I think what they're objecting to is him somehow extrapolating from that that the sludge is actually the same composition, if it's in conflict with the actual documents.

MR. SCHRADER: And just to be clear, Your Honor, my objection is that there is no foundation that whatever the testing was done at this time would apply to later sludge 20 years or 18 years later. I don't think it's our burden to show that there is an actual conflict.

THE COURT: I'm not saying it is. I'm just saying you brought that up, that there is a conflict. So...

MR. SCHRADER: My understanding is that the processes at the plant changed over that time, and we have somebody who could -- we could make an offer on that, offer of proof on that point. But, again, I think the foundation first needs to be established.

THE COURT: So, in other words, their objection is that you can't just say, "Well, I have

looked and there is nothing that shows that it changed." When you have a foundation objection, you've got to show that it was the same.

MR. WOTRING: I understand the foundation. It's sounds to me like they have a foundation objection, and it's being sustained.

THE COURT: Well, I'm asking you --

MR. WOTRING: Right.

THE COURT: -- whether or not I should sustain it. In other words, do you have any documents to show that it was actually in the same composition as is reflected in that exhibit at the time that it was produced from this plant for this pit?

MR. WOTRING: I would ask the expert whether they're the same, before moving back into the document, is how I would handle it.

THE COURT: Well, I need to know what he's basing that on so I can address the foundation objection. So let's bring Dr. Pardue in, and I'm going to let you ask him that outside the presence of the jury.

MS. GRAY: Maybe while he's coming in, Your Honor, this is one of the documents that was to be redacted for the black liquor reference on the fourth page. I'm just asking --

MR. MUIR: It has been.
THE COURT: It has been.
MS. GRAY: I appreciate it.
MR. SCHRADER: Is that okay, the way -- the way to handle an issue?
THE COURT: Yes. That was actually fine. That was fine.
MR. SCHRADER: Thank you.
(Dr. Pardue re-takes the stand and the following proceedings were had outside the presence of the jury).
THE COURT: Doctor, if you could come back up to the stand for a minute, Mr. Wotring is just going to ask you a few questions outside the presence of the jury.
You may proceed, Mr. Wotring.
Q. (By Mr. Wotring) Dr. Pardue, do you have Exhibit 43 in front of you?
A. I do.
Q. And you've got test results there that we just discussed from the stand?
A. Yes.
Q. On Page 2 of Exhibit 43, correct?
A. Yes.
Q. And are those test results -- you've also seen

test results of the sludge from the plant in the 1964/1965 time period?

A. Yes.

Q. Are the testing results on Page 2 of Exhibit No. 43 similar to the testing results that you see later on, 10 years later, from the sludge at the Pasadena plant - or at the impoundments? Pardon me.

A. At the impoundments or at the plant itself?

Q. First at the plant, itself.

A. Yeah. The moisture content is -- is -- is the same. That carries throughout. These other tests, the volatile matter and some of the fertilizer wasn't repeated during that period. So I don't have any other data -- I don't have that data.

Q. So the only test results that you have that you compare from then in 1955 with 1965 is the moisture content?

A. Right.

Q. Okay.

THE COURT: Okay. Any objection to that testimony?

MR. SCHRADER: No.

THE COURT: All right. Doctor, you may stay there and we'll bring the jury back in.

MS. GRAY: Your Honor, so we don't have --

I'm not asking for a preview, but is there going to be further lines of questions that the sludge that was taken, you know, to the impoundment in 1965 was the same as the sludge that was produced in 1947, as reflected in this? Because I think that we should then also make certain that there is a foundation for those. If it's just the water content, we're good.

THE COURT: My understanding is, based on Dr. Pardue's testimony right then, comparing the two testing results, he's only going to be talking in terms of similarity about the moisture content.

MS. GRAY: I just wanted to confirm that's what Mr. Wotring --

THE COURT: Is that correct, Mr. Wotring?

MR. WOTRING: Yes, it's the moisture content.

THE COURT: Then I think we're good. We'll get them lined up.

(Jury present)

THE COURT: Please be seated. You may continue, Mr. Wotring.

MR. WOTRING: Thank you.

Q. (By Mr. Wotring) We were looking at --

MR. WOTRING: Pull up the second page of Exhibit No. 43 and scroll down a little bit.

Q. (By Mr. Wotring) Okay. What was the test results from 1955 with respect to the solid moisture content of the sludge? Where do you look on this sheet for that information?

MR. SCHRADER: Objection to the question. I think I can clarify it for him. It's the date, 1957, right?

THE COURT: They are referring to the date in the document.

MR. WOTRING: Oh, okay.

Q. (By Mr. Wotring) If you look at the top, it has got the test results from 1947, correct?

A. That only applies to this data. This sentence says, "Tests conducted recently in our own lab on dry sludge gave the following results."

Q. So that's where you got the information about the moisture content from the sludge?

A. Right, uh-huh.

Q. I may have messed that up. We'll go to the top of that page and move on. So which test results came from 1947 at Texas A&M?

A. This right here (indicating).

Q. And which test results came from their own lab?

A. Everything below this line (indicating).

Q. So if we want to know how much water is in our

sludge, which portion of this do we look at?

A. This line right here (indicating).

Q. All right. Let's go through that again. What -- what is the -- the solid moisture content in the sludge, based upon the review of Exhibit No. 43, the September 21st, 1955 letter that we're looking at?

A. It's 93 percent water and 7 percent solids.

Q. Then what does it say happens next? Well, let me ask you this: Is that similar -- is their test results from 1955 about the water content of the sludge that went into the impoundments?

A. The -- all of these numbers, the 7 percent, the 63 percent, are repeated -- repeatedly used in the calculations to apply the -- you know, how much -- how big of a barge do we would need, how much water needs to be applied. So all of that is used in the calculations of the sludge amounts moving to the impoundments in question.

Q. I see. So in the documents about moving the sludge to the impoundments we're here about, they use the figure that we're looking at from this document?

A. Correct. I'm not sure if it's from this document or just the number is always the same, but those numbers are the same.

Q. What does it mean when something is 7 percent

solid and something is 93 percent moisture?
A. It's very wet. It's mostly water.
Q. Let's say -- what's -- anything similar to Jell-O? What would Jell-O be?
A. I don't know. Jell-O is a gelatin, so it's interlinked. So it's probably not a good --
Q. It's a different thing?
A. -- not a good different thing.
Q. What does it say happens if you use vacuum filtration?
A. That takes it from 93 percent water to 56 percent water.
Q. And what is vacuum filtration?
A. It's a pump that pulls a vacuum through a sample and pulls the water out of it.
Q. Now look at the last line there on that paragraph that we're looking at. What happens if you throw sludge out on the ground and let it stand, according to this document?
A. It reaches an average moisture content of 47 percent.
Q. Okay. So that says, "Sludge thrown out upon the ground and allowed to stand in shallow layers for two or three years reaches an average moisture content of 47 percent" right?

A. Correct.
Q. Okay. What -- how -- what is just mud?
A. Mud might be 60 percent water, 65 percent water.
Q. And then go back up a sentence. What happens if you -- the second sentence says, "This compares with a drop of 93 percent to 63 percent by holding the sludge in the sludge storage basins." Is that a figure that's also used in the later calculations about how to barge the stuff off the plant?
A. Yes.
Q. All right. So we're looking at, real roughly, this may not be -- is this the moisture content of kind of mud?
A. Kind of mud, but this is a fibrous material, so it presents a little bit differently than mud does.
Q. I see.
A. It's probably a little bit more wet cardboard or wet paper than mud.
Q. And so the figures we see in 1955 are the figures that are -- the same numbers are used later when they're calculating how much sludge to move off -- off the plant and into the site?
A. Correct.
Q. All right. And you have looked at testing from

actually the impoundments we're here to talk about, right?

A. Yes.

Q. And let me --

MR. WOTRING: If we could pull up the first page of Exhibit No. 858, which references IP 2353 (sic).

Your Honor, may I approach?

THE COURT: Yes.

Q. (By Mr. Wotring) Now what are we looking at?

A. These are test results that the Texas Board of Health did during an investigation of waste disposal practices in the pits.

Q. Okay. And what kind of tests did they do?

A. Well, just -- these are just general chemical characteristics of the material, specifically the water that was floating above the sludge.

Q. I see. And what was significant about these test results in your analysis in this case?

A. Well, this explains why the -- what was known at the time about these materials, why it had to be contained. This BOD term is called Biochemical Oxygen Demand. It basically measures how much oxygen is needed to take that organic waste and break it down.

So a high number like that -- sewage, raw sewage from a pipe, you know, from a municipal sewage is

about 2 to 300. So this is, you know, several times that, in some cases 10 times that. So this is a very organic material that if you put it in a water body, would suck all the oxygen out of that water body. The bacteria would break it down and all the oxygen would disappear, and that would cause a fish kill in the aquatic system.

Q. And we're not talking about -- it sounds simple, but the stuff we're talking about that went into the impoundments, we're not talking about domestic sewage, are we?

A. No. It's an industrial waste.

Q. Industrial waste.

A. Right.

Q. And it's a product of the paper mill process and it's an industrial waste product?

A. Yeah, just wood fibers that are organic, right.

Q. I see. And what else is significant about Exhibit No. 858 that you used in formulating your opinions in this case?

A. Just to show the oxygen effect. They never measured any oxygen in the water, which is consistent with the testing. There are a lot of solids there, as well. That's, again, a level that would be above which one could discharge. And these are the sort of

guidelines over here about that.

The other thing of note here is the color. So this is a measure of how colored the water is. So water from paper mills tends to have a real strong color, brown or black. So these are very high numbers that would be reflective of very colored water.

Q. And this test result is from one of the impoundments we are talking about?

A. Correct.

Q. And which impoundment number are we talking about?

A. The -- this is the upper pond. So this is Pond 1 in our -- in our diagram.

Q. Maybe we can go back to Exhibit No. 31. Which pond is that?

A. It's this one (indicating).

Q. All right. And then if we could go back to our Exhibit No. 858, there is Page 2, which is IP 2354. Which pond are we talking about here?

A. This was somewhere taken in what is called a lower pond, which is either Pond 2 or Pond 3.

Q. There is some -- is there some uncertainty in the documents about when Pond 2 and Pond 3 were constructed?

A. Yes.

Q. Okay. How would you compare the testing results from this, generally, if it can be done? Let me ask that first. Can you compare these test results generally with the test results from the other pond?

A. Yes. They're the same test and same lab. So these -- these, again, are very high elevated oxygen demand numbers, very high solids, no oxygen, high color.

Q. So if there is no dissolved oxygen in the water inside the impoundments, could fish swim in it?

A. No.

Q. And I believe that the examination -- these test results we've been talking about are part of the Texas State Department of Health investigation done on this site, correct?

A. That's correct.

Q. And that is Exhibit No. 861, which I believe is preadmitted. And do you have a copy of that?

A. I do not.

Q. Let me hand you a copy of Exhibit No. 861. Just real generally, the test results we just looked at came from the investigation that was done. And are they part of Exhibit No. 861?

A. They are.

Q. Okay. And are they part of the attachments to Exhibit No. 861?

A. They are part of the table on one of the later pages.

Q. Okay. So that's where that information came from that you have about the water in the impoundments?

A. Correct.

Q. 861 has other information that you used in your opinions; is that right?

A. It does.

Q. Okay. What other information does Exhibit No. 861 have that you used in formulating your opinions in this case?

A. On the first page there is some general information that describes the process by which the sludge was moved from Champion to the waste pits.

Q. Okay. Let's go down to that paragraph "General," stop there, and let's look at that. This says, "This investigation covered the present practice of disposal of settled solids from the Champion Paper processes, a practice which is carried out by McGinnis Industrial Maintenance Corporation," right?

A. Yes, yes.

Q. What else did you use in this paragraph in formulating your opinions in this matter?

A. The dates were key. The -- it says here, "This operation has been carried out since approximately

1 year ago with the first operation begun in June of 1965. This work was done by the Ole Peterson Construction Company with the McGinnis Corp taking over and beginning operation on September 13th, 1965."

Q. Now, why was that -- why was that time period significant to you in formulating your opinions?

A. The -- the sludge dates -- the sludge amounts had dates associated with when things were moved from which basin on the plant. So these dates confirm when they started loading into one group of pits versus another. So this allowed me to sort of sort the material into where it finally went ultimately -- where it was ultimately disposed.

Q. Okay. Is there anything important in the second paragraph of No. 861, the Texas State Department of Health investigation, that was significant to you in formulating your opinions in this case?

A. Yeah. This describes the process. So while I think I understood the process from other documents, it confirms the process that was -- that was undertaken then.

Q. Okay. Anything else about Exhibit No. 861 that you used in formulating your opinions?

A. It also has the amounts on the second page.

Q. If we could turn to the second page of Exhibit

No. 861, and which paragraph are you looking at?

A. I'm looking at the -- down here, the quantity (indicating). I'm sorry. There we go. So this is the 135,000 cubic yards of material, kind of the upper bound of what we think went into the impoundments.

Q. Let's read that, then. "It was established by Mr. Henderson that complete cleaning of the two ponds would result in the removal of 135,000 cubic yards of material," right?

A. Yes.

Q. And is that consistent with your analysis of the records of this case about how much material was placed in the impoundments?

A. Yes, it is.

Q. Okay. And from your review of this document and other documents, did you formulate an opinion about whether waste sludge material went into what we've been calling Impoundments 1, 2 and 3?

A. Yes.

Q. And what is your opinion on that, Dr. Pardue?

A. Yes, that each of those three pits were filled with waste material, with sludge mixed with water.

Q. And when you say "sludge mixed with water" for each one of the three pits, do you have information from your review of the documents in this case about the --

the percentage of solids and water in the sludge that was placed in all three of those impoundments?

A. Well, it was about two-and-a-half parts water were mixed with one part of the sludge. And that was -- water was needed to mix it to make it palpable. So it was kind of more -- it was mostly water, but it was more solid. So you couldn't get it to the barge unless you mix it with water again and then ran it through a pump.

Q. So what they did at the plant was they had described the process of getting the sludge out of the plant and into first the barge that went to the impoundments?

A. They had a source of water, and they would jet that water in, mix that with the solid material that were in these basins -- think of sort of an excavation, sort of slowly mixing -- they had a pond area, mixing that together and then pumping that with a dredge pump into a barge that was adjacent to the plant in the Houston Ship Channel.

Q. Then when they got from the barge -- barged it to the impoundments, how did they get it off of the barge into the impoundment, itself?

A. So they had the same kind of a dredge pump. It's a 10-mile boat ride. You would put the dredge pump down into the barge and pump it into the impoundments

that way.

Q. One further point on Exhibit No. 861 before we move on. And you've reviewed 861 in connection with your work in this case?

A. Yes.

Q. Okay. Does 861 have -- does it discuss whether McGinnis and/or Champion would need permission from any government entity before pumping water out of the impoundments?

A. Yes. It tells them not to pump water out of the impoundments and discharge that into any water body.

Q. And on what page of Exhibit No. 861 is that statement located?

A. I'll find it.

MR. WOTRING: Your Honor, can we approach?

THE COURT: Yes.

(After a bench discussion outside the hearing of the reporter and jury, the following proceedings were had:)

Q. (By Mr. Wotring) My apologies, Doctor.

Where on the State Department of Health document do you see any information about whether the McGinnis and Champion needed permission before discharging into the river?

A. It's on the last page.

Q. Okay. Let's go to the last page.
A. The last text page. I'm sorry.
MR. WOTRING: It's 4024.
Q. The last two paragraphs?
A. Yes.
MR. WOTRING: If you could pull up the last two paragraphs.
Q. And where do you see statements regarding whether they needed permission before discharging into the river?
A. Well, they're talking about getting a permit application to do that because they were -- it was very uneconomical to take the water back to the plant.
Q. All right. Let's walk down and walk through this document?
MS. GRAY: Objection, Your Honor. May we approach?
THE COURT: Yes.
(After a bench discussion outside the hearing of the reporter and jury, the following proceedings were had:)
MR. WOTRING: Brian, would you go ahead and take it down?
THE COURT: Ladies and gentlemen, we're going to take a quick break. Y'all take this as a

restroom break because we're going to take a little longer before lunch.

(Jury not present)

THE COURT: The reason I -- please be seated.

The reason I decided to take a break is when we're talking about prior agreements or not prior agreements, I think it's better to do that without the jury present, because you-all have different recollections of what you agreed to on exhibits and we need to be able to talk about that freely and not have the jury here.

MR. WOTRING: By way of short-circuiting a lot of argument, I know the Court is familiar with this document and I'll just present it to the Court and the Court can make a decision about whether it's the southern impoundments or the ongoing operations.

THE COURT: Actually, first, I think is the question about whether or not there was an agreement to redact portions of it.

MR. WOTRING: There is clearly redaction about the southern impoundments. We're now having a dispute about whether this is the southern impoundment.

MS. HINTON: Your Honor, I can clear this up, I think. I think I can straighten this out. And I

think that Harris County is attempting to cause great confusion. They have redacted items in two exhibits when it suits their purpose and they've left things in when it doesn't. The ruling of the Court is clear that the southern impoundment is not to be dealt with in this case.

THE COURT: Actually, that was an agreement of the parties.

MS. HINTON: An agreement or that we were only dealing with the impoundment -- the site that's at issue here.

THE COURT: Yes, ma'am.

MS. HINTON: With respect to 858, Your Honor, I would point out that on the third page of that instrument is also testing results relating to the southern impoundment that shouldn't be dealt with, as well as another page in here relating to the southern impoundment. They did redact the picture that showed the southern impoundment, but they did not remove the testing results and comments.

I'm not going to -- next on Exhibit No. 17, I have the version that was taken to the Meet and Confer and the discussion here. This document, it's undisputed, deals with the northern impoundment and the southern impoundment and where McGinnis was attempting

to get a permit to pump water off the southern impoundment on behalf of the landowner there.

THE COURT: Right. Now it seems to be clear from the documents that were admitted, if that's Plaintiff's 17, there is a note it is to be redacted as to other sites.

MS. HINTON: And it is not redacted as to other sites, Your Honor. On the second page of this document it also has left in -- it's, once again, partially redacted to suit their purposes. On the second page of that instrument, the next-to-the-bottom paragraph refers clearly to the southern impoundments, about them being nearly full at this point in time.

Mr. Muir, you'll get a chance to speak.

The next page, Your Honor, also shows the highlighting that relates -- that we discussed with them about the people on the southern impoundment and discharging water for the southern impoundment, which this related to.

In addition, it refers specifically to the old pond south of Highway 73 and samples from that.

And this last page here, Your Honor, that they were just attempting to question the witness about, discussing "did you need permission to remove water" is all about the southern impoundment. It is not about the

site at issue in this lawsuit.

I would request that this document be stricken from the record in light of counsel's misuse of it with this witness. So that document is Plaintiff's Trial Exhibit No. 861, as well as Defendants' Exhibit No. 17 as used by the plaintiff, for their misuse -- I'm sorry -- as well as Plaintiffs' Trial Exhibit No. 858, in light of their misuse of those documents and in accordance with the agreement and the rulings of this Court.

THE COURT: 858 and 861 were admitted as redacted. So the discussion is about whether or not it's been redacted properly with regard to the southern impoundment.

MR. WOTRING: Well, with regard to the testing results, the only pages that were displayed were of northern impoundments. That's the only thing the jury has seen. So if there is a dispute about other pages, that has not been published to the jury.

THE COURT: Okay.

MR. MUIR: The first page of the document, which is completely gone, was the test results for the southern impoundment.

THE COURT: Okay.

MS. HINTON: Here is a test result of the

southern impoundment.

MR. MUIR: This is --

MS. HINTON: The southern impoundment.

MR. MUIR: -- it is --

MS. HINTON: I'll explain it to you.

THE COURT: Just a moment.

MR. WOTRING: Can I put the witness on the stand and lay a foundation?

THE COURT: Let me hear your argument first as to what you think, of those documents that Ms. Hinton just referenced, if you think it's not related to the southern impoundment, tell me what part you think is not related to the southern impoundment, of the portions that she referenced.

MR. WOTRING: On the two pages we showed to the jury, and the only two that I published to the jury, those are the northern impoundments. The third page she's talking about of discharges into the river --

THE COURT: Are you planning on showing the third page to Dr. Pardue?

MR. WOTRING: No.

THE COURT: Then we'll address that separately. All right. I think that's all on that document. Let's move on to the other document.

MR. WOTRING: The other document, the last

page is talking about permission to discharge in -- from the impoundments. And that was the predicate I laid with the witness prior to asking the question and prior to moving to that page, was from these -- I defined the impoundments based upon Exhibit No. 31. I clarified that. I can't say "as opposed to the southern impoundment," so I have not done that.

THE COURT: I understand.

MR. WOTRING: So we defined the impoundments, and I asked the question: "Is there information in this about getting permission to discharge from the impoundments?"

He said "Yes."

"Where would you find that?

"It would be on the third page."

I would like the record to reflect, because it can, that I'm proceeding very slowly in my questioning of the witnesses and trying to move deliberately through these documents to avoid these kinds of charges, which I think are unfounded.

And I think that the witness has already answered the foundational question, which is that these two paragraphs -- and for the record, we're talking about Plaintiff's Trial Exhibit No. 861, and that is MIMC HC4024, the two paragraphs that were displayed

briefly for the -- for the jury, refer to the impoundments which are the northern, not to southern impoundments.

THE COURT: Let me see the document.

MR. WOTRING: Absolutely. Wait just a second. Let me let Mr. Muir respond.

MR. MUIR: In further support of that, Your Honor, the discussion about excess water and its disposal that is included, that they didn't claim was part of the southern impoundment, talks about the fact that it is very uneconomical for McGinnis to haul the water back. So they would like to discharge it directly. Actually, that's what was happening in December of 1965, they were discharging directly the water from those impoundments.

MS. HINTON: There is no evidence of that, Your Honor.

THE COURT: Just a moment. Let Mr. Muir finish.

MR. MUIR: The black liquor, that has been excluded, but not from the Court. This discussion is about why they want to be able to discharge it. If you look at the last page, it talks about the test results that are being done and that they aren't going to go for an attempted permit until they get these test results

back, the majority of which are test results on Page 3. The ones that are remaining are all test results for the New Pond 2, new Pond 1, and the San Jacinto River, which is -- which is Page 3 of Exhibit 858, which counsel has mistakenly accused us of leaving in as part of the southern impoundments.

The southern -- south of Highway 10 document, the page of 858 which had the results for the pits south of Highway 10, was an entire page, that was the first page of the document, and it has been removed entirely. If you look at the page that they're claiming to be southern impoundment, it says "characteristics of San Jacinto River water."

MS. HINTON: I apologize, then. If it is the San Jacinto River, then it is, Your Honor, but --

THE COURT: You can't talk at the same time.

Mr. Muir, you were saying. Then I'll let Ms. Hinton respond.

MR. MUIR: If you look at the exhibit which is 861 --

THE COURT: And I am on Page 3.

MR. MUIR: -- on Page 3 there is a discussion of the excess water.

THE COURT: Yes, sir.

MR. MUIR: You have results for new Pond 2, new Pond 1, which are clearly and undisputed the northern impoundments, and for number 3, which is San Jacinto River near barging pit -- point --

THE COURT: Let me stop you there. I think Ms. Hinton is saying she agrees with you on that.

MS. HINTON: I do agree. However, it also has references on the old pond. And the issue --

THE COURT: Where do you think the references to the old pond start? And then I'll let Mr. Muir address that.

MS. HINTON: I think he's redacted a portion of it, but I want to focus on the date of this document, too, is May 1966, when moving materials to the northern impoundment ceased. This permit application relates to removing water and to issues relating to Hall's Bayou. This permit application has nothing to do with removing waters from the northern impoundment that's at issue in this case.

Activities had ceased in May of 1966 at the northern impoundment, and this was a permit process and an application relating to removing waters off the material.

MR. MUIR: This is April.

THE COURT: Finish your sentence, please.

MS. HINTON: It's stamped "May of 1966."

THE COURT: Yes, ma'am.

MS. HINTON: So there is discussion in here in addition, Your Honor, of this no dispute of the southern impoundment, wanting to remove waters off of it, the seeking of a permit, characteristics, and the southern impoundment issue should not be addressed. There is no evidence in this case, and this document does not reflect in any way that Mr. McGinnis was seeking a permit to remove waters off the northern impoundment.

At this point in time, also, as the Court is aware, there were activities going on relating to the Hall's Bayou site. This is a very misleading document. It is prejudicial. It has not been properly redacted. And we would request that counsel, if it intends to use redacted documents, which we thought we had an agreement, and our records reflect that that last page was supposed to have been deleted, that they be given to us before they are handed to the witness and we have ample time to review the redactions.

THE COURT: Okay. So the question for you, Mr. Wotring, is: What is the evidence in this case that there was any permit sought for removal of water from the northern impoundments in May of 1966?

MR. WOTRING: That's what this whole discussion --

THE COURT: Well, they're arguing that it's related to Hall's Bayou.

MR. WOTRING: Hall's Bayou is not addressed in this at all. This is the follow-up to the December -- we believe the follow-up to the December black liquor pumping episode. It's an investigation that was done on April 22nd, 1966, and Hall's Bayou was not done until July -- excuse me -- until August of 1966. I mean, you can read the two pages, Your Honor. And the witness has already testified that these are relating to the southern impoundments --

MR. MUIR: You mean the northern impoundments.

MR. WOTRING: -- I'm sorry, the northern impoundments --

MS. HINTON: My point exactly, Your Honor, another impoundment.

THE COURT: I understand from the witness. Right now I'm talking about the document. So separate and apart from Dr. Pardue, I need you to show me how you think Page 4, which is what I think it is, is referencing the northern impoundments, as opposed to the southern impoundment.

MR. WOTRING: Because it says this --
THE COURT: Tell me where you are.
MR. WOTRING: I'm on Paragraph No. 1.
THE COURT: Where it reads "this type of waste"?
MR. WOTRING: It says, "It appears that several things are to be considered in this matter." Okay. First of all, let's go back. I'm looking at paragraph -- or Page MIMC 4214 of Exhibit No. 861.
THE COURT: Yes, sir.
MR. WOTRING: It says "Officials of both companies were most anxious to work something out regarding this method of waste disposal." "This method of waste disposal" is talking about the existing northern impoundments. That's from the first page. We know that because it says on the first page that --
THE COURT: "The present practice of disposal of settled solids from the Champion Paper processes."
MR. WOTRING: "This practice consists of the removal," and it has that sentence.
THE COURT: Off the record. Let me read this.
(Whereupon, after a bench discussion outside the hearing of the reporter and jury, the

following proceedings were had:)

THE COURT: Ms. Hinton, obviously on Page 4213, you agree that the portion under "Excess Water & Its Disposal" above where it's redacted does relate to the northern impoundment?

MS. HINTON: I have to look at the redacted version, Your Honor.

THE COURT: So currently what I have asked Ms. Hinton is -- we're looking at Page 4213. We are under the paragraph that reads "Excess Water & Its Disposal," and we're above the portion that's redacted. My question to her was: Does -- doesn't this relate to the northern impoundment? It's talking about the current practice of taking the water back on the barges. And I think it does. I'm just confirming that with you.

MS. HINTON: I think it does, Your Honor. However, the date is odd. It's the -- the dates off. That's why I think they're talking more generally about could they do permitting for discharge of water, because at this point in time there is no dispute in May of 1966 operations had finished. And it -- the materials were there in May of 1966. They talk about the -- you are right, the redacted part talks about the older area.

THE COURT: Let me keep reading.

MR. MUIR: Your Honor, if we can address

one thing? This is an investigation report -- a report about an investigation on April 22nd.

THE COURT: From a previous time.

MR. MUIR: This is an April 22nd investigation. And they're talking about the pits being almost full, which the -- if you look at --

THE COURT: I understand your point --

MR. MUIR: -- 858, it goes --

THE COURT: -- that this is an investigation from April.

MR. BENEDICT: Your Honor --

THE COURT: Just a second. Mr. Benedict.

MR. BENEDICT: I was going to say, regardless of which pit it's referring to, it does establish knowledge. They admit they needed a permit to discharge to the river.

THE COURT: Let me ask you a question that occurred to me during this whole line of questioning. Is that really an issue in this case?

MR. WOTRING: They have stood up again in opening and said, "We never needed a permit to do anything, to discharge. We did everything right. We did everything" --

THE COURT: Oh, okay. I don't think that's what they said. I think what they said is, "We didn't

need a permit to put this waste in this impoundment and because people could do those things back then; and, yet, we got permission, so to speak, by the way we went about it." I don't think anybody has suggested that these companies say they could have discharged the waste directly into the river and that would have been fine.

Now, I do understand one of the things you're going to refer to, and maybe that's something that can be cleared up. You're going to refer to the fact that Mr. Carter, in his opening, talked about it being the "wild west" and that people were discharging everywhere and that was all okay because there was no permitting. I understood your point about that.

MR. WOTRING: Yes.

THE COURT: I think that can be clarified, because the point I think they were trying to make in the opening was that they didn't need a permit to dispose of this waste in the impoundments. No one is trying to suggest that it would have been okay and there was no permit required for them to discharge directly into the river.

MR. WOTRING: Unfortunately, that's what was suggested in opening.

MR. CARTER: It was not.

THE COURT: But even if one could take that

as a potential reading of the opening, that's something that can be clarified by an instruction, a stipulation. I don't think that means that we need to have questioning with an expert about an issue that's not in dispute in this trial, that potentially is causing you-all to spend a lot of time arguing about whether or not we are talking about the southern or the northern impoundment. And no one is suggesting that they should have been able to discharge it directly into the river in this trial.

The issue in this trial is it was okay to put it in the impoundments. You-all have said that. They have said that. What is not okay is for it to get out of the impoundments near or in the river.

MR. WOTRING: What do I do to respond to statements from counsel that it was the "wild west" and people were doing anything they wanted at that time.

THE COURT: We either give an instruction or we have a stipulation. That's how we address it.

MR. CARTER: We didn't have an objection at the time, if there was some concern about what was being said, so that I could clarify what I meant during the point in time that it was happening. That's --

THE COURT: The sensitivity to that is obviously people have a concern about objecting during

someone's opening statement. We've talked about addressing things separately in terms of someone has opened the door.

What I would suggest on this is I understand why you felt like that was an issue left out there. I think that would have been something good for us to address for the witness, because I think the way that one is cured, if it is a concern, is an instruction or stipulation, because this is a nonissue in this trial.

There is no suggestion by -- and shouldn't be any suggestion by any party that it would have been okay for the defendants to discharge their waste directly into the river.

MR. WOTRING: I have the reference from opening.

THE COURT: No, I remember the.

Discussion because I took copious notes.

MR. WOTRING: And if objecting is required to preserve the issue, I've already asked the witness did this document require them to get permission before discharging into the river.

THE COURT: I understand. We talked about how to handle objections in a sensitive way for all parties' benefits. I don't think anybody has waived

anything.

MR. WOTRING: Okay.

THE COURT: I don't have a problem with the fact that you didn't jump up and object in opening. I also don't have a problem that they didn't jump up and object during Dr. Pardue's testimony in the ways we all talked about we didn't want to do, especially with experts.

So my view is, I hear what Harris County is saying on that point. I also understand the defendants' point. My job as the Judge is to decide what is relevant for purposes of this trial. Discharging without a permit is not relevant for purposes of this trial because that is not an issue in this trial, nor is it something that would be okay to do.

So I don't care if we do it by a stipulation or an instruction, but I think that's the proper way to address it, rather than go down this rabbit trail with an expert that, one, is a lot of time when y'all are trying to make sure you get this witness on and off and, two, is not an issue in dispute in this case.

So how would you-all like to proceed? I can draft an instruction, or you-all can draft with me a stipulation. Which would you prefer?

MR. WOTRING: I think it would be easier if the Court were to draft an instruction.

THE COURT: Give me 5 minutes and I'll draft an instruction for your review.

MS. HINTON: May I also add for the record that to the extent they're attempting to get Dr. Pardue to offer evidence about permitting requirements in the 1960's in Texas, he's been -- not been offered as an expert in that regard and he's not qualified to give such testimony.

THE COURT: He's not been offered as an expert in that regard. I don't think that's an issue, which is why I think the proper way to address it is with an instruction.

MS. HINTON: Thank you, Your Honor.

THE COURT: I will be right back.

(After a break, the following was had:)

THE COURT: I believe this is already admitted in evidence, but just in case, Plaintiffs' Exhibit 1005, which is the survey with the attached aerial photographs, is admitted.

MR. WOTRING: Thank you, Your Honor.

THE COURT: With that, we can bring in the jury and let Dr. Pardue get back on the stand.

(Jury Present)

THE COURT: Please be seated. Thank you, ladies and gentlemen, for your patience while we dealt with some exhibits. We're ready to move forward.

Mr. Wotring.

MR. WOTRING: If we could pull up the first page of Plaintiffs' Exhibit No. 861. We were talking about that document.

Q. (BY MR. WOTRING) Do you remember that document, Dr. Pardue?

A. Yes, I do.

Q. This is the State Department of Health investigation?

A. Yes, it is.

Q. And it had some information in that that played a role in you formulating your opinions?

A. Yes, it did.

Q. And I think, if we just highlight the top for a brief minute to orient everybody -- and that's the State Department of Health investigation. There are two dates on it. There is a May time stamp. Do you see that?

A. I do.

Q. You've got your laser pen. Point that out real quickly.

A. (Witness complies).

Q. Okay. Then what was -- is that the date the

investigation was done?

A. May '66.

Q. That is when it was stamped. Look at the bottom at the last sentence.

A. It was April 22, 1966.

Q. Okay. Now, I think that you confirmed the information in this report that you used in formulating your opinions. The stuff that we haven't talked about is at the bottom of Page 2; is that right?

A. That's correct.

Q. Let's pull up those bottom two paragraphs alone. And why don't you read to us the pertinent information from the bottom two paragraphs.

A. "One of the ponds has been filled and the second is nearly full. Levees on the first pond appear to be in good shape, with possibly slight seepage, while the second pond needs additional work on the levees. According to Mr. McGinnis, wet weather has prohibited the proper completion of the levees and additional work is to be done as soon as possible."

Q. Okay. Now, what -- what's pertinent or important about that information in the first paragraph for you in forming your opinions in this case?

A. Two issues. One, that the ponds were filled during this period; and since I independently calculated

that they would be filled by the amount of waste that was moved, this was confirmation of my calculations.

Q. That's right. Because remind us again, what did you do in this case? What was your work?

A. It really was develop a timeline and understand how the waste was moved from the plant to the pits, and then to opine on the mechanisms by which dioxin left the pits and got into the river.

Q. Now, we've heard a little bit about the first opinion. Do you have an opinion on the second issue?

A. Yes.

Q. What's that opinion?

A. It's my opinion that the dioxin did leave the impoundments starting in 1973 and going to the end of the penalty period on a daily basis.

Q. Okay. And briefly, because we'll get into it in more detail, do you have an opinion on what mechanisms were in place during the period of time we're talking about for the dioxin to get out of the impoundments and into the San Jacinto River?

A. Well, during this time tidal water was getting into the impoundments, so there was a break in the levee that allowed the water to get in. At some point in time the whole impoundment was completely submerged. So three mechanisms. Water would come along and just pull

the particles off and those particles would leave from the waste pits because there wasn't any containment any more because of the issues that I just mentioned.

And the second thing is just the fact that there was dioxin-contaminated water, that included water and colloids, small particles, and whenever that water would come in on a daily basis, or when it was completely submerged and the river was flowing over it, that provided another way for dioxin to be released and get into the river.

Q. What is a colloid?

A. It's a very small particle. If you have ever looked at natural water and seen a yellow or brown color and it's clear, that's what it is. It is a particle -- it's really too small to be seen by the eye; but it will generally impart a color to the water. So dioxin wants to get out of the water so badly it will tend to attach onto those small particles. Many compounds do this, and that allows them to be transported more easily.

Q. Okay. If I take water out of the San Jacinto River or any other river and I hold it up and I see little bits of stuff on it, is that colloids? Can I see it?

A. No, you can't see.

Q. What am I looking at when I hold the water up

to the light?

A. Those are settleable particles that you see if you -- if you can visibly see particles, they would settle.

Q. So you are talking about two different things: Settleable solids --

A. Right.

Q. -- and colloids, right?

A. Correct.

Q. Those are two different things?

A. Two different things.

Q. How do they compare in size?

A. One is hundreds of times the other. A colloid is a couple of microns and smaller. It's impossible to see.

Q. If I go get a vial out of the river, I hold it up, I see stuff in there and it's floating around, that's settleable solids, right?

A. Right.

Q. That's a hundred times bigger than the colloids?

A. Well, it can be many thousands of times bigger, depending on the size of the particle.

Q. So it can be a lot bigger, depending upon the size of the particle and the size of the colloid?

A. Yes.
Q. But, in general, if you have a settleable solid, it's big; if you have a colloid, it's really small?
A. Yes.
Q. In comparison to the two?
A. Yes. And a colloid, you could leave it forever and it would never settle.
Q. Let me show you something else. This is, I think, Page 1 of a document that's in evidence, Exhibit No. 1005. Are you familiar with this document?
A. Yes.
Q. This is not going to work. What is this document?
A. It is a survey of the area around the San Jacinto waste pits that I reviewed in making my opinion.
MR. WOTRING: Your Honor, is it all right if I come over here?
THE COURT: Yes, sir.
Q. (By Mr. Wotring) Okay. Tell us again what this is?
MR. STANFIELD: Can we pull the easel out, Your Honor?
THE COURT: Yes. Do you want to use that

easel that was used for the other big poster?

MR. WOTRING: Sure. I should have brought that out before, but yeah.

Q. (By Mr. Wotring) While we are doing that, what is this?

A. It is a survey, a plat, a survey plat.

Q. And do you use survey plats in your work as an environmental engineer?

A. Yes.

Q. And what kind of information do you get from a survey plat?

A. You get elevations and you get, you know, actual land areas. Property ownership is established by these types of documents.

MR. WOTRING: Your Honor, is it all right if I ask Dr. Pardue to stand down and point out some things on that?

THE COURT: Yes, absolutely. You may stand down, sir.

Q. (By Mr. Wotring) Tell us what you are looking at on that first page on Exhibit No. 1005. Where is the site?

A. The site is here (indicating).

Q. Okay. And where is I-10 on that first page of 1005?

A. It's this -- well, at present, it's this road right here (indicating).

Q. And what role did this survey play in you forming your opinions in this matter?

A. Well, a key time frame is when the pits actually submerged beneath the river, because in that case, certainly every day dioxin was leaving the waste pits. This was a survey that was done for some other purpose. I don't know the purpose for what it was done, but it was done in 1989. And this is the pits in question (indicating).

And, essentially, the two pits that we numbered 2 and 3, which were the most eastern side, you see the surveyor -- the lines that are given here is anything that's above the mean sea level, anything that's -- that doesn't show up here, which is most of Pits 1 and 2, some of Pit 3, is all submerged. So it's -- it's beneath mean sea level. And the surveyor is the one who establishes that.

Q. Okay. Can I ask you to stand back for a minute?

MR. WOTRING: Brian, could you blow up this portion of that first page?

Q. And does that information we're blowing up on the screen have information that you used in forming

your opinions in this case?

A. It gives the elevation of the mean sea level that was established by this -- by this survey work as being 1.24 feet above sea level. So anything you see here that is in white, bound by these marks, are above 1.24 feet; and anything that's below that would be submerged every day by the tides coming up and down are permanently submerged.

Q. And what date does it say this survey was?

A. Well, this is April through June of 1989.

Q. So as of July 1st of 1989, do you have an opinion about whether the portion of the impoundments that we see on the first page of Exhibit No. 1005 were submerged under the San Jacinto River?

A. Yes. My opinion is that most of the pit area, certainly Pits 2 and 3, were completely submerged by that time.

Q. Okay. I don't want to shoot this -- and did they remain submerged through March 30th of 2008?

A. Yes. Every aerial photograph we see, they're underwater.

MR. WOTRING: And if we could pull up Page 2 of Exhibit 1005, and if we could reorient that.

Q. All right. What are we looking at? Is this part of the survey report that's 1005?

A. It is. Essentially, what the surveyor did is take this -- do you see this shape? It looks kind of like a dragon. She just overlaid that over aerial photographs of the pits from different periods of time.

Q. Do you want the pointer?

A. That would be great.

Q. Okay. So what are we looking at in 1964? Show us the property boundaries in 1964.

A. So the property -- well, the property boundaries are this area right here (indicating).

Q. Okay. And what do you see in 1964 -- what is that green outline that's overlaid on the property boundary?

A. That's the 1989, you know, amount that's above mean sea level.

Q. So if you wanted to compare -- qualitatively, not quantitatively -- the amount that was left above the water, depending upon the tides in 1989, how would you say -- what amount of the original land mass is still above the water in 1989, when they did the survey?

A. It looks like about a quarter of it is left, about a quarter of the property, somewhere between a quarter and a third. So four or five acres. This is, again, a 20-acre tract. So it looks like four or five of the acres are still above mean sea level.

Q. And if we could go to the next aerial photograph on Exhibit 1005, and what are we looking at there?

A. So this is 1973. Again, you can see the outline -- the '89 outline. And you can see, again, the water now on the left side, the water around the pits. You start to see the levees starting to kind of fall apart on this side. I'm interpreting this as certainly a lot of water in the pits, as well.

Q. By the way, do you look at aerial photographs as an environmental engineer from time to time?

A. Sure, yeah, or satellite images. Yeah, all of that we do.

Q. Do you have any trouble seeing water on that aerial photograph?

A. No.

Q. Do you have any trouble telling the difference between the water and the land on that aerial photograph?

A. No, I don't.

Q. And 1973 -- is 1973 a date that is important in your opinions in this matter?

A. It is.

Q. Why is that, sir?

A. Because this is the first aerial photograph

that we start to see a break in the levee, and that break is in this area here (indicating). You can blow that up and see that. But that area shows up in many of the later images as being an area here -- I'm washing it out when I flash my light on it.

Q. And that's not the photograph you-all looked at for determining whether there is a breach in 1973?

A. What?

Q. This is not the same aerial photograph you looked at for 1973, is it?

A. Right, right.

Q. And --

MR. WOTRING: So if we can scroll back and go to the next page.

Q. In this aerial photograph, again, it shows us the outline of the property and it shows us what -- the green is outlining what was left in 1989?

A. Right. So by '84 even, you know, a lot of the boundaries, a lot of the pit had eroded away. So even as late as '84, there was a lot of material -- the pit material was just no longer above the waterline.

Q. Okay. And did you get any information in your review of the historical documents about what the paper mill sludge was like in April and May of 1966, what its physical characteristics were like?

A. It was a fibrous material. It would stick together. It was wet, so we know it was mostly water. Maybe -- they described it as the consistency of wet cardboard or kind of a cheap eggshell carton, like you've seen recycled cardboard, that kind of material.

Q. If we could pull up --

MR. WOTRING: Brian, would you go to the first page of our Exhibit No. 861? That's the Department of Health. I'm then going to go to the first paragraph -- not yet. I'm then going to go to the first paragraph of the second page. Let everybody get there or have a chance to get there before you blow anything up.

Okay. If you would, blow up the first paragraph, Plaintiffs' Exhibit No. 861.

Q. So why don't you read for us what that says, Dr. Pardue?

A. This is a section called "Quality of Material Removed." It says, "An analysis of the material was not available, but officials of Champion indicated that the material was neutral in pH, non-toxic, and primarily fibrous. The dried material resembled a cheaper grade of cardboard, such as used in egg cartons, et cetera."

Q. Read the last sentence, please.

A. "Mr. McGinnis reported that he had used it

successfully for matting for his equipment in the disposal site."

Q. Okay. It's described there as a cheaper grade of cardboard such as used in egg cartons. Let's talk about egg cartons. We're not talking about today's egg carton made out of that -- what are they made out of?

A. Styrofoam.

Q. We're not talking about that. We're talking about the old egg cartons, the old cardboard egg cartons, right?

A. Right.

Q. The old cardboard egg cartons?

A. Right.

Q. And it's called a cheaper grade of cardboard, right?

A. Yes.

MR. WOTRING: Brian, can we go back to Exhibit 1005? Can we go back to, I don't know, the last photo we were on? Let's go to 1973 first.

Q. Now, would that cheap -- would the paper sludge put in the impoundments, which was described as a cheaper grade of cardboard, do you think that would solidify and become harder or softer over time, if it was in this environment that we're looking at on the screen?

A. Well, my experience with wet cardboard suggests that, you know, once it gets wet, it becomes more vulnerable to breaking apart or to -- certainly to not keeping the integrity of a layer.

Q. And by the way, we now know that the sludge put into these Impoundments 1, 2 and 3 had dioxin, right?

A. Yeah, we know that, right.

Q. And dioxin, as we've heard, is a hazardous substance?

A. It is.

Q. Even if you didn't hear that, you know that from your work in the environmental engineering field?

A. Yes.

Q. So as we see in the documents, the Health Department document then describes it as non-toxic, that's because at that point in time they didn't know about dioxin?

A. That's correct.

Q. All right. Now, if we can keep briefly scrolling through these aerial photographs, I think we did '84 --

MR. WOTRING: And we can move along, please.

Q. That's 1985. Does this also show portions of what we call -- confirm with me -- Pit 2 and 3

underwater?

A. Yes.

Q. And from your work in this case, do you see -- do you have an opinion about whether in this photograph we're looking at, do you see a breach in the berm?

A. Yes, I see it here (indicating).

Q. And where do you see that?

A. Right here (indicating).

Q. Okay. And what -- what -- why is that -- is that important?

A. Well, again, the vector that's moving the water out every day is water. You know, it's either the particles that are being moved by the water or it's the colloids or the dioxin that's dissolving in the water, itself. So the real key is that water was able -- these berms were not maintained, or at least weren't maintained at this time, to keep this breach from happening and, therefore, water was able to get into those every day and bring material out.

Q. You raise an interesting issue. You reviewed the historical documents about the site, these impoundments, right?

A. Yes.

Q. And do you have an opinion about whether there was any ongoing maintenance of the site during -- well,

let's just say after August of 1968?

A. I didn't see any maintenance records. And certainly what I see here aerially is inconsistent with any sort of building up of the levees or strengthening them or compacting them to prevent this from happening.

MR. WOTRING: Can we go to the next photo, Brian?

Q. In 1992, does that again show the portions of the impoundments underwater?

A. It does.

MR. WOTRING: Can we look at 1994?

A. What is significant about this picture is you kind of see -- you can see that during this period you start to see the erosion of material from the first impoundment, what we're calling Pit 1, from the northern side of the pit.

MR. WOTRING: Finally, if we move on to 1997 and 1998, and if we could look at 2002, the aerial photograph from No. 1005.

Q. Again, does that show the portions of Pits 2 -- no. What does it show?

A. Well, this screen outline again is the '89 footprint. It's not what is above water during this period. So you see, you know, again, from '89 and this time period you've got all of this material disappeared,

all of this material has disappeared. So you start to see, essentially, by this time the first -- the Pits 2 and 3 are completely gone. And you are starting to see the erosion of this third -- this most western pit that we're calling Pit 1.

Q. Okay. And just taking this picture as an example, how would dioxin get out of the impoundments into the river?

A. Well, as water is passing over the surface of -- of this area, if there was any of the waste left by this period of time, it would -- of course, as the current goes over it, it would stir up some of the particles. Wind would also do the same thing. And it would slowly erode it from the surface and this dioxin is really down to particles. So that's an important feature. Also the dioxin that is down in the waste in the water, either as a colloid or as a dissolved form, would exchange with the water as the water passed above it.

Q. Okay. This is going to sound like a silly question, but it's not. If the impoundments are under the water, would you also say that they are adjacent to the waters of the San Jacinto River?

A. They're in the water of the San Jacinto River, but -- yeah, in or adjacent.

MR. SCHRADER: That calls for a legal opinion.

THE COURT: That will not be taken as a legal opinion. Maybe you can rephrase it.

Q. (By Mr. Wotring) Let's do it this way: Is Pit No. 1 on that area -- is that -- is that located adjacent to the San Jacinto River?

A. Yes.

Q. Okay. And the other two pits are under the water?

A. Yeah, they're in the San Jacinto River.

Q. They're in the San Jacinto River. So the floor, the bottom that we can't see under the water is under the water of the San Jacinto River, right?

A. Right.

MR. WOTRING: Let me ask if we can pull up, Brian, from Exhibit 386.

Q. And, Doctor, I think you can sit down. I think I can take down the survey.

MR. WOTRING: Can we pull up Figure 8-A from Exhibit No. 386, the first --

Q. And you're familiar with this picture?

A. Yes.

Q. And you're familiar with the date that it was taken on?

A. Yes. I think it was February or early 1973.
Q. And does this figure play a role in your opinions in this matter?
A. It does.
Q. This is the one that you were looking at in your appendix?
A. Yes.
MR. WOTRING: And could we also take --
Q. Look at Figure 8-D. And what do you see in -- do you see anything significant in Figure 8-D?
A. Yes. So this is the first image where you really start to see that breach, sort of at about 2:00 o'clock here (indicating). And if you pay attention to that location as we scroll through photos of a later date, you would see -- you would see that that breach kind of opens a little bit, but it certainly stays consistent as I've placed the same color as the water.
Q. By the way, you looked at the opinions of another expert in this case, did you not?
A. Yes.
Q. And who is that?
A. Dr. Bedient.
Q. Well, tell us who Dr. Bedient is.
A. He is a professor at Rice University.
Q. And what is he a professor of?

A. He's a surface water hydrologist, but he's also a civil and environmental engineer, like myself.

Q. Okay. Well, why don't you explain to us what -- what kind of issues you're addressing in this case for Harris County and what kind of issues he's addressing.

A. I'm addressing really the chemical issues of how dioxin got out. And Dr. Bedient will be talking about water movement. He's an expert on water movement.

Q. If I may, Dr. Bedient is in the courtroom, isn't he?

A. He is.

Q. He put his hand up. That's Dr. Bedient (indicating). We'll hear from him later.

I interrupted you, and I think I distracted everybody. What is the difference between what you're doing and what Dr. Bedient is going to do?

A. I'm going to talk about the chemicals. He's going to talk about the water.

Q. Now, during this period of time -- and, again, I need to ask this question: The pits that you see in 1973, when this photo was taken, are those pits adjacent to the waters in the San Jacinto River?

A. Yes.

Q. Okay. Is there some water from the San Jacinto

River in the pits, do you think?

A. It looks like there is, yes.

Q. And why do you say that?

A. I see the same color here as I do inside (indicating). And obviously I see a way for that water to get inside.

Q. Okay. And is -- again, do you see the outline of the three different pits we talked about? And one more time, tell us which one is 1, 2, and 3.

A. This is 1, 2, and 3 (indicating).

Q. And from this period of time, whenever this picture was taken, on through March 30th of 2008, do you have an opinion about whether dioxin was being released from Pits 2 and 3 every day?

A. Yes, I do believe it was -- I believe that it was being released every day.

Q. Okay. And for Pit No. 1, do you have an opinion about whether it was adjacent to the San Jacinto River every day from the date of this picture in '73 on through March 30th of 2008?

MR. SCHRADER: I renew my earlier objection, that's calling for a legal conclusion.

THE COURT: It's not to be taken as a legal conclusion.

MR. WOTRING: No.

THE COURT: You may answer, sir.

A. It is adjacent to the river, yes.

Q. (By Mr. Wotring) Now, there has been some -- not yet, but there might be some.

Discussion about the quality of the berms around the levees. Do you understand -- and you have information about the quality of the berms and the levees?

A. Yes.

Q. And, again, the levees are the earthen impoundments surrounding -- just highlight them for us.

A. (Witness complies). The middle and then the outside.

Q. Where is No. 2?

A. This right here (indicating).

Q. Okay. So we don't have to do this again, that's 1, 2 and 3 (indicating). And what information do you have about what those were made out of?

A. Well, we don't know a lot of construction details; but given some of the later borings that happened through the levees during the investigations in recent times, we believe -- I believe that the berms were just made out of the soils that were present on the site. And those were -- consisted of sand, silt and clay that was there. So the berms were put together

with materials that were on the site.

Q. Okay. Are there historical documents that talk about what the berms were made of?

A. No.

Q. There is no construction drawings?

A. No construction drawings, right.

Q. Okay. Does the information in the historical documents give you some idea about what the berms -- how the berms would weather over time?

A. Yes.

Q. And let's look at -- let's look at the private Champion memorandum. While we're getting organized, let me go on to another matter.

MR. WOTRING: If we could pull up Exhibit No. 1436.

Q. Are you familiar with this document?

A. I am.

Q. And tell us what it is.

A. This is the contract between Champion and Ole Peterson Construction Company, which was the first contractor who took on handling this sludge and moving it from Champion to another location.

Q. And does this agreement have any information that you used in formulating your opinions in this case?

A. It does because it establishes the amount of

material that was there.

Q. And what paragraph do we go to to look for the amount of the material that was there?

A. It would be done on the front page, I believe.

MR. WOTRING: So if we could blow up that third paragraph --

A. Yes.

Q. And what in this -- in this paragraph gives you information for your opinions in this case?

A. Well, we knew this 135,000 cubic yard figure was important because we knew that's what the total capacity of the basins that were on the Champion property, that's all they could hold. Again, that's -- that's 38 or so Olympic-sized swimming pools, for reference. So this contract was let -- allowing Ole Peterson to remove that 135,000 cubic yards of material; but then it also set up a regular process by which they would come back and continue this process in the future. And the 75,000 cubic yards is important because that's about what they produced a year. So this was every 5 years they were going to come back and do the same process. So this -- this confirmed a lot of the volume that was helpful in my work.

Q. Okay. And --

MR. WOTRING: And if we could pull up the

first page of Exhibit No. 851.

Q. And you're familiar with this document? I've got a copy if you need it.

A. Yes.

MR. WOTRING: May I approach, Your Honor?

THE COURT: Yes.

(Document tendered)

Q. (By Mr. Wotring) All right. Well, tell us what this document is.

A. This is a monthly activity report from the pollution department of Champion, the Air and Stream Control department of Champion, talking about their activities for the month; and this says March of 1965.

Q. Okay. And if we could go to -- which paragraph in this document do you think is important for your opinions?

A. I think the second and the material under "Off-site Disposal of Sewer Sludge."

Q. All right. Well, what is important about this, in your opinion?

A. This, again, sets up the history of what happened. Ole Peterson partnered with an engineering company called Burma Engineering to develop this scheme to be able to take the sludge out of the secondary basins and move it to a location. The first thing they

had to figure out was how to -- how much water do we need to add to get it out and to get it into a pumpable form. So a trial was conducted, apparently, in March of '65 to establish that.

And the other thing that was important, I think, for me was this last sentence. It says, "We intend to continue to work closely with all developments in on-site disposal of sewer sludge as an aid to contractors and to be certain that our interests are protected."

As I'm establishing the timeline, that really establishes kind of a partnership between Champion and the contractor.

MR. SCHRADER: Objection, Your Honor. This is beyond the scope of his expertise. We move to strike that last part.

THE COURT: Sustained as to the last part in that answer.

Q. (By Mr. Wotring) Let's look at the second sentence. It says that "Sludge was loaded at an average consistency of 11.4 percent and unloaded at 10.6 percent."

A. Uh-huh.

Q. Do you know what it's talking about?

A. That is the solids percentage. So you remember

when it gets into the basin initially from the primary basin, it's at 7 percent water. And then when it stays there it goes to -- it's 7 percent solids. And when it stays there it goes to a little more than 40 percent solids.

What they found was they had to add enough water to get it to about 10 percent to make it go through the pipe.

Q. I see. Okay. There's been some discussion -- or might be some discussion in this case that because the sludge material at the plant had to be jetted out with water, that that means it was -- the physical characteristics, that it wouldn't -- it wouldn't get out of the impoundments unless there was a similar jetting of water later on?

A. No. That's just what it took to get it into a form that would pump. It's a totally different concept.

Q. Well, why don't you explain why that's a totally different concept?

A. So they have to use a pump to move the sludge and water mixture. And the more solids that are there, it has to actually physically go through the pump, so the more solids that was there, the pump would break. So it had to be a really -- a slurry, a mixture of water and soil that was very water heavy. It looked like a

lot of water and not very much of the solid material. That is a totally different situation than, you know, wet cardboard underwater and what might happen with respect to the way that breaks down and the way particles may move off of that. Those are two totally different concepts.

Remember, the material that's there, you had to jet it out with water. It was still more than 50 percent water, even when it was in the secondary basins. It was a material that was just saturated with water.

Q. And if it was saturated with water when it was put into the -- well, let me do it this way: You'll remember from the 1955 memo there was a figure about what happened to the solid content of the sludge when it was left on the ground for a couple of years?

A. Yes.

Q. And remind us what that solid content was.

A. It reached a moisture content of 47 percent, which means the solids would be 100 minus that or 53 percent.

Q. Okay. Now, do you have an opinion about what the levees were constructed out of for the impoundments?

A. I believe they were constructed with an alluvial material that was on-site.

Q. And what does an "alluvial material" mean?
A. The river mud, the river sediment that had been -- that was at the bank.
Q. And why do you have that opinion?
A. Well, that was what was present at the site. The site -- the pits were constructed very quickly. The land closed in August of 1965, and by September they were already bringing sludge to the material -- to the pits to be placed there. So a very quick construction period.

The second thing is that in multiple documents that you'll see, the levees are a problem. People who come and visit the site, they immediately say the levees are not strong enough, they're falling apart and they're consequently having to be repaired during this period of time when the sludge is there.

And that really is only consistent with weak soil material that the levees had been made out of, not a clay that would stick together very well, but a material that also included sands and silts, that whenever the river water would hit it or, you know, they come in contact with rainwater, for example, you would get this erosion process.
Q. Okay. And do you have any more contemporary data about what the berms were made of?

A. We do. There was one boring that was done during the investigation by some of the consultants that went through one of the -- that central berm in the diagram.

MR. WOTRING: Can we pull up Exhibit No. 31?

Q. And what are you talking about, the central berm?

A. So this -- this one right here (indicating). In fact, the boring was made at about right at that location. But it's kind of the levee or the berm that separated the first pit and the second and third pit. So this right in this length here (indicating).

Q. We may have skipped a step here. In Texas we may all know what borings are, but maybe we don't. What is a soil boring?

A. It is when you take a core, like a circular piece of metal, and you push that through. We have machines called Geoprobes that you push through, and you can take a very deep sample all the way down, very deep in the ground. And we use those to understand, you know, what kind of materials are present, whether it's chemicals there, but also just, you know, what does the material look like, is it sand? Is it silt? Is it clay? Is it some mixture of that?

Q. What did that boring log show?
A. That boring log showed that, at least what this central berm was made out of, was a mixture of sand and silt and clay, so different layers of different kinds of materials, most like you would find adjacent to a river.
Q. And if -- well, you're familiar with the two letters that Dr. Quebedeaux wrote. We're looking at the May 25th and the June 11th letters.
A. Yes.
Q. You've seen these before?
A. I have.
Q. You'll save us some questioning if you can tell me what is in a Reese's Peanut Butter Cup?
A. Peanut butter and chocolate.
Q. Now, Dr. Quebedeaux does have some information in these letters about what the sides of the impoundments are made of.
A. Yes.
Q. And what does he say they're made of?
A. He says clay.
Q. And is -- is that consistent with the soil boring and other historical documents?
A. No, it is not.
Q. Is it -- is it usual or unusual when you're doing an investigation of historic impoundments to have

some data that's consistent or inconsistent?

MR. SCHRADER: Calls for speculation.

THE COURT: Sustained as phrased.

Q. (By Mr. Wotring) Have you ever -- you've looked at other historic sites involving impoundments in wetland environments?

A. Yes.

Q. And in those other sites, have you had an opportunity to review the historic data?

A. Yeah. Sometimes, yeah.

Q. And are there occasions when the historic data is not always consistent?

MR. SCHRADER: Objection, irrelevant and incomplete after that.

THE COURT: Sustained.

MR. WOTRING: I'll move on.

Q. (By Mr. Wotring) Given the information you have about the impoundments and what they were constructed of, do you have an opinion about whether they would have withstood being submerged under the San Jacinto River, as we see from 1989 on?

A. No. I think they would have performed exactly like we saw from the aerial photographs, that unless they were maintained, unless they were repaired on a regular basis, material would have eroded away and,

therefore, we saw what we saw. The water was able to get into the impoundments when they weren't taken care of.

Q. If the impoundments had been made out of clay exclusively, do you think that you would see the kind of outline of the berms that we see in the aerial photographs that we've looked at?

A. They might last a little longer; but I think just the fact that the river ended up overtaking the site, I don't think that even clay berms that were never maintained could have withstood that amount of water.

Q. Well, maybe we can do a little preview. You're not going to be talking about how tides or water affects the berms. That's primarily what Dr. Bedient is going to talk about?

A. Correct.

Q. And whether the berms were constructed out of clay or out of the material that you've talked about, the alluvial material -- why do you call it alluvial material?

A. That's the term they used in their borings. The consultants for the parties used that term in their borings when they were describing the material.

Q. What does "alluvial material" mean?

A. That means the typical material that's found in

river sediment, which is a mixture of sand, silt and clay.

Q. And would that be what you would expect to be in the San Jacinto River?

A. Yes.

Q. That kind of material?

A. Yes.

Q. Okay.

MR. WOTRING: If we could pull up what we have talked about as Exhibit No. 135.

Your Honor, may I look over Brian's shoulder for a second?

THE COURT: Yes, uh-huh.

Q. (By Mr. Wotring) You're familiar with this document?

A. Yes.

MR. WOTRING: And if we could go to the final paragraph and the final sentence.

Q. Now, if I might -- Dr. Pardue, we're not going to be talking about the stuff that we're not going to be reading.

A. Okay.

Q. And it says, "At the time given above, the superintendent, Mr. Ned Chesser, was notified, since I could not contact anyone at your office. Mr. Chesser

was asked to communicate to you the information that within the next 24 hours... the dikes which are being used to contain the waste should be repaired."

Do you see what I have read?

A. Yes.

Q. Now, if the dikes at the site where the impoundments are located were made out of clay, do you have an opinion about whether they would need to be repaired by December of 1965?

A. No. Clay levees wouldn't have began to disintegrate three months after they were constructed.

Q. You may have to say that again slower, for the record.

A. Clay levees would not have begun to disintegrate and require repair three months after they were constructed.

MR. WOTRING: Your Honor, I think it might be efficient if we took a break and discussed some other documentary matters.

THE COURT: All right. Ladies and gentlemen, we'll take a break.

I'll have you step down, too.

(Whereupon, after a bench discussion outside the hearing of the reporter and jury, the following proceedings were had:)

THE COURT: You may take the stand again, Doctor. Please be seated.

You may continue, Mr. Wotring.

MR. WOTRING: Thank you, Your Honor.

Can you pull up Exhibit No. 16?

Q. (By Mr. Wotring) Doctor, you have looked at this. You've reviewed this exhibit in forming your opinions in this case? This is the December 30, 1965 private Champion memorandum?

A. Yes, I have.

Q. I want to talk about the stuff we're going to read. It says in the first paragraph, "Attached are a copy of a letter from" -- "dated December 28th, 1965, relating to the disposal of Champion's waste sludge material." Do you see where I have read from?

A. Yes, I do.

Q. And the -- does this exhibit -- does it play any role in you forming your opinions in this case?

A. This is more information on the levee problems related to the pits. This is in December of '65, after -- again, referring to the September '65 construction date.

Q. Okay. And what information does this exhibit provide to you about the construction of the levees?

A. Additional information about the levees being

in need of reinforcing some three months after they were constructed, and also referring to rain eroding away the slope of the levee, so that about half its original width had disappeared at two points.

Q. All right. Where should we be looking in this document to talk about, number one, the erosion of the levee?

A. It would be the second paragraph of the section termed No. 1.

Q. All right.

MR. WOTRING: Brian, would you mind blowing that up?

Q. And is this the paragraph?

A. Yes.

Q. And what is important -- or is there anything significant in this paragraph about your opinions in this case?

A. It just refers to rain washing away a significant portion of the levees, so the outside slope of the levee, such that it was reduced to about half its original width at a couple of points.

Q. Now, you might be going a little bit quicker, later in the afternoon. And if the rains -- if the berms were made out of clay, do you have an opinion about whether the rains would have been able to wash

them away?

A. No. That wouldn't have been possible.

Q. And, again, refresh everybody's memory between when the start of the -- the impoundments were constructed and the date of this document.

A. The impoundments were constructed sometime in August and September of 1965; and this additional report of levee damage is in December of '65.

MR. WOTRING: And if we could look at the final paragraph on Exhibit Number 16.

Q. And that says -- well, you read it for us, Doctor.

A. "The contractor has finished emptying the 'B' Basin and is in the process of getting set up in the 'A' Basin. He will be ready to start operating again during the week of January 3rd. Further discussions will be held with the contractor before the operation is resumed."

Q. Does that give you information about the loading of the impoundments?

A. Yes. So the B and A basin, in this paragraph, refers to the numbering system in place at the plant for the secondary basins.

Q. And then finally, go ahead and read the concluding paragraph before we move along.

A. "I'm sure we all realize the sensitive nature of this entire operation and the need for special precaution in connection with the disposal of this waste material."

MR. WOTRING: And if we could look at Exhibit No. 44.

Q. And have you looked at this document before in reaching your opinions in this matter?

A. Yes.

Q. Okay. And, again, only talking about the portion we're going to read from, let me read it. It says, "Because of the pollution problem, it is impractical to consider further dumping at the present location on the San Jacinto River." Do you see where I'm reading?

A. Yes.

Q. And if the berms were made out of clay, do you think there would have been -- well, do you have an opinion about whether you would have seen a pollution problem there?

MR. SCHRADER: Objection, Your Honor. That's speculation as to the meaning of the document.

THE COURT: Mr. Wotring?

MR. WOTRING: I'll try it again.

Q. (By Mr. Wotring) Based upon your review of the

information in this case, Dr. Pardue, have you formulated an opinion about what the pollution problem is in this document?

A. Well, the document continues --

MS. SCHRADER: Objection, Your Honor, calls for speculation.

THE COURT: I think there is a difference between referencing what they meant in this document versus what you think is what he thinks from other documents is the problem.

MR. WOTRING: Thank you, Your Honor.

Q. (By Mr. Wotring) Based upon your review of other documents in this case, do you have an opinion about what the pollution problem is referenced in the portion of Exhibit No. 44 I just read?

A. I do.

Q. And would you tell us what that opinion is?

MR. SCHRADER: Same objection, Your Honor. It calls for speculation. It's not expert opinion testimony.

THE COURT: Counsel, approach for just a second.

(After a bench discussion outside the hearing of the reporter and jury, the following proceedings were had:)

THE COURT: Sustained.

MR. WOTRING: Now, if we could pull up Exhibit No. 143, which are the board minutes from August 19th, 1968.

Q. (By Mr. Wotring) And have you looked at these before, Doctor?

A. Yes, I have.

Q. And did these board minutes --

MR. WOTRING: Your Honor, may I approach?

THE COURT: Yes.

MR. WOTRING: I'm assuming everybody -- do you need another copy?

Q. (By Mr. Wotring) And what information is contained in Exhibit No. 143 that is material to your opinions in this case?

A. There is some discussion by the members of the corporation about what to do and what they did, ultimately, with the waste pit land.

Q. And what paragraph are you looking at for that information?

A. I'm looking at the next-to-the-last-page, the bottom two paragraphs.

Q. 301?

A. Yes.

MR. WOTRING: Can you pull up -- let's

start at the paragraph before. Can you pull up the paragraph before?

Q. Does this paragraph have any information that helped you formulate your opinion in this case?

A. Yes.

Q. Why don't you describe what information is in there and how it relates to your opinion.

A. Well, this is, again, acknowledgment that the pits are full, completely filled with waste materials and can no longer serve as a dump site.

Q. Where does it say that in the portion of Exhibit No. 143 that we're looking at?

A. It's the third paragraph in that -- in that -- I mean the third sentence in that paragraph. Excuse me.

Q. And why don't you indicate that with the laser pointer that you've got.

A. Starting here (indicating).

Q. And the sentence states, "It was pointed out that the property was completely filled with waste material and could no longer serve as a dump site."

A. Correct.

Q. Then is there any other information contained in the August 1968 board of directors minutes that is material to your opinion?

A. Yes. The two paragraphs at the bottom of the

page, in terms of the resolution that was adopted by the corporation at that time.

Q. Why don't you read the resolution?

A. Okay. "Resolved, that the real estate owned by this corporation on the San Jacinto River, previously used as a dump site in connection with corporate hauling activities, be abandoned as a dump site; and that said land be eliminated as an asset from the corporation's books and records by reducing its stated book value from the cost of $50,000 to the nominal sum of $1."

Q. And why is that information material to your opinions in this case?

A. It indicated to me that the property was abandoned by the corporation and no further maintenance activities would be conducted.

Q. And from your review of the documents in this case and the aerial photographs, do you have an opinion about whether the property was maintained after the date of these board of directors minutes?

A. Yes, I do.

Q. And what is that opinion, Dr. Pardue?

A. That it was not, that the levees were left to erode into the river, allowing a release of dioxin into the river.

Q. I have a couple more documents I want to talk

with you about, and I think we're going to need to use the Elmo for them.

MR. WOTRING: Your Honor, may I approach?

THE COURT: Yes.

MR. WOTRING: For the record, what I'm looking at is Figure 5-41 from Exhibit No. 298.

Q. (By Mr. Wotring) Have you looked at these before?

A. Yes.

Q. All right. The jury is not looking at it yet. So let's talk about Exhibit No. 298. There.

MR. WOTRING: Thank you, Brian.

Q. What is this document, Dr. Pardue? Let's start there.

A. This is what is called a Remedial Investigation Feasibility Study, which is part of the Superfund process.

Q. And this is one particular page from that study, correct?

A. It is.

Q. And what are we looking at on this one page?

A. We're looking at a map of the San Jacinto River in the area of the waste pits, starting at the Lake Houston Dam.

Q. Okay.

A. And the key thing here is kind of hard to see, but if you can focus on these yellow lines that correspond to mile markers -- okay, good.

Q. First of all, let's get oriented to where we're looking, where the pits are.

A. You need to go up a little bit in the graph, please. Okay, there.

Q. Now, with the laser pointer, tell us where the pits are.

A. This is I-10 and this red outline is where the original property boundary was located.

Q. First tell everybody, why are we looking at this document?

A. This document has information about the chemical fate of dioxin and provides evidence of the ongoing releases of dioxin from the waste pits.

Q. And so we've got the sites. Now tell us what those yellow lines are. First, show us the yellow lines.

A. This is one here (indicating).

Q. What is that showing us?

A. That's a mile-marker, and that's the miles from a certain datum which is below, further down in the graph.

Q. We've got some more information on this I want

to ask you about. What is that black line around?

A. This black line, I think, is the site -- the total site boundary that the EPA established for the Superfund site, if I'm not mistaken.

Q. The yellow lines are what?

A. Mile-markers.

Q. What is important, if anything, about the information contained on this -- this, again, is Figure 5-41 in Exhibit 298?

A. It connects with a graph that I'd like to show or would like to have shown, and would point you to the site being located between mile marker 2 and 3 on this -- on this aerial.

Q. Okay.

MR. WOTRING: And let's scroll out a little bit, just a little bit. Thank you.

Q. And does this show the area surrounding the impoundments and the area surrounding the site?

A. It does.

Q. Now, what is the table that we need to look at to understand why this is important for your opinions?

A. Well, the graph is 5-43(a).

Q. All right.

MR. WOTRING: We need to scroll back out. Sorry, Brian.

Q. Okay. What are we looking at first, generally?
A. So this is a graph of two different things. One is the dioxin that's dissolved in the water, okay, and one is the dioxin that is on the particles that are present in the river.
Q. So it's showing us two things, dioxin that is dissolved in the water?
A. Right.
Q. But I think some people may say dioxin is hydrophobic?
A. Yes.
Q. What is hydrophobic?
A. Hydrophobic means water heating or a chemical that wants to get out of water.
Q. I think I have heard some people say it's very hydrophobic?
A. Yes.
Q. So if it's very hydrophobic, then why would we see any readings on that portion of Figure 5-43(a)?
A. Well, it's tendency is to get out of the water; but certainly you can measure dioxin in water.
Q. And what is this showing?
A. So this is showing on the X axis or the bottom scale is this river mile and so --
Q. Wait a minute. Wait a minute. Show us the X

axis on that top chart.

A. Right here (indicating).

Q. That's the one going horizontal?

A. Horizontal, correct.

Q. That's the X axis?

A. Right.

Q. What is it showing?

A. That's the river mile that references the previous map that we showed you.

Q. Let's go back to the previous map.

A. Go down to the bottom left corner, please. So the data starts here. This is mile-marker zero where the San Jacinto goes into the Houston Ship Channel (indicating).

Q. And then you have -- what is the next mile-marker?

A. Mile-marker 1.

Q. What is the next mile-marker after that?

A. Mile-marker 2, which is just south of the I-10 bridge.

Q. What is the next mile-marker after that?

A. Mile-marker 3 is just past the waste pits.

Q. If you turn the page and go back to that table, what are we looking at now?

A. Now, with that little reference point, you

can -- you can start to see --
Q. Hang on. Hang on.
A. Okay.
MR. WOTRING: And I apologize to Brian for not having this lined up for him.
Q. Okay. Where is the 0 mile-marker on that table at the top?
A. It's right here (indicating).
Q. Okay. And if we follow that line up -- we talked about the X axis. Can you show us the X axis again?
A. Here (indicating).
Q. That's telling us space, right?
A. Right.
Q. Where is the 5 mile-marker on the X axis?
A. Right there (indicating).
Q. Where is the 10 mile-marker?
A. Right there (indicating).
Q. I think they get the rest. Now, what is the -- what is the other axis called?
A. So this is the Y axis, and it's the -- again --
Q. Wait a minute. Where is the Y axis?
A. Right here, the vertical axis (indicating).
Q. And what is that showing?
A. That is showing us the dioxin concentration in

the water in this top graph. It's in the water column. What is important in this is this is a long scale. So if something is different between here and here, it's a factor of 10, like 1 to 10, 10 to a hundred. So differences are larger than they appear on the graph.

Q. So things are -- things are bigger than what is in your mirror?

A. Right, exactly.

Q. Okay. And let's talk about the -- what it's measuring on the Y axis. The TCDD dissolved and the other figure, PG, per liter, what is that?

A. So picogram per liter is a very small measure, but that's what we measure for dioxin.

Q. I have to unpack some things for folks.

A. Sure.

Q. We start with -- start with a gram, and then what is -- what is a nanogram?

A. That's one billionth of a gram.

Q. And is a picogram bigger or smaller than a nanogram?

A. It's smaller.

Q. So it's smaller than one billionth of a gram?

A. Right.

Q. So we're measuring very tiny amounts of dioxin?

A. Very tiny amounts.

Q. And that, I think -- we may go to it again, but that's what this chart is showing us, is dissolved dioxin in picograms per liter?

A. Yes.

MR. SCHRADER: I object. We need to approach.

THE COURT: All right.

(After a bench discussion outside the hearing of the reporter and jury, the following proceedings were had:)

THE COURT: Ladies and gentlemen, we need to ask you to step out for a minute. We'll bring you right back in.

(Jury not present).

THE COURT: Please be seated.

I know you are pulling that information.

MR. WOTRING: It's what we had at the bench that I read that said that the 45-43(a) is one of his tables in the Adriens-Johns supplement which was provided before his deposition was taken.

THE COURT: And the supplement to his opinions?

MR. WOTRING: Yes.

MR. GIUGLIANO: Your Honor, this was referenced in the supplemental opinion with respect to

the EPA findings do not support the concept of a stable waste layer in the impoundment, itself. It's in the last paragraph of that saying, "In fact, the water recovered had measurable dioxins." They're talking about the water in the waste layer. So this wasn't discussed or presented in the context of water measurements here, here and here along a river (indicating). That wasn't the whole point of this.

MR. WOTRING: It is in No. 18, Footnote 18.

THE COURT: Okay.

"In addition, water column TCDD and TCDF were in order of magnitude higher in surface water and suspended sediments above the northern impoundments when compared with water upstream or downstream."

And that's what references Footnote 18, which is Figure 5-43(a) and 5-43(b).

MR. GIUGLIANO: This is in rebuttal to the comments about the stability of the waste layer. This wasn't presented to -- as a basis for walking through all the readings and talking about the dioxin levels throughout. He has multiple times under oath said he hasn't measured, has no comments or opinions on the concentrations at any point in the river.

THE COURT: So, in other words, their argument is that he's relying on that figure to show

that there wasn't stability in the impoundment, not to show what the measurements are along the river.

MR. MUIR: Yes. But in order to do that, that's -- the difference, the order of magnitude difference he has there, that's what shows that instability.

THE COURT: Okay.

MR. SCHRADER: I think I can --

MR. WOTRING: It is a little bit prejudicial. I did provide this before, and now I have had to call the jury out twice.

MR. SCHRADER: No. I did that one. That was me.

THE COURT: You did. Isn't the way to resolve this to make it clear we're talking about this opinion?

MR. SCHRADER: That's the problem. The way it's being presented now, it's making it look like there is dioxin escaping from the site and traveling 10 miles.

THE COURT: Can't you -- I'll give you some leeway if you want to jump to it, okay. I think that may take care of the problem.

MR. SCHRADER: Yeah.

THE COURT: If you want to jump to the opinion and show that that supports it, I'll give you

leeway to do that in a leading way. Because their concern is that by you walking through it the way you are, it's -- it appears to be being used for a different purpose; and that's not what I hear you saying. So just jump to the opinion and say, "This is the basis of your opinion, right?" I'll let you lead him on that.

MR. WOTRING: I appreciate the Court's guidance. I would also like to be able to explain that he had some basis for this opinion. Again, this is --

THE COURT: That's okay, as long as you're tying it to that opinion. I think what they're saying is we're going through it to get up to the opinion and it could appear it's for other purposes. So maybe you could jump to the opinion and then show how it supports the opinion.

It allows you to do the same thing. You are just tying it to that opinion. In other words, I'm going to let you explain it, have him show the basis, all that. It just shows it's particularly tied to that opinion.

MR. SCHRADER: I just want it to be clear, there is not going to be any suggestion that what that -- that what that graph is showing or is purported to show is dioxin that has left this site and moved to those locations.

THE COURT: No. That is not the purpose for which he is offering it. That's why I am asking him to jump to the opinion and clarify that. And then you can describe that graph, that figure as much as you'd like to.

MR. WOTRING: Is it okay if I hand him what I'm talking about to do that?

THE COURT: Yes.

MR. WOTRING: So that we don't wander off?

THE COURT: Yes. That way you'll get the ability to talk about that figure the way you want to; but it's clear it's tied to that opinion.

MR. WOTRING: Is there an objection to me conferring with Dr. Pardue to --

THE COURT: No, not for that purpose. I think it will keep it all smoother.

(Jury Present)

THE COURT: Please be seated.

You may continue, Mr. Wotring.

MR. WOTRING: Thank you, Your Honor.

Q. (By Mr. Wotring) Okay. Let's try and summarize your opinion. Do you have an opinion that dioxin escaped from the impoundments?

A. Yes.

Q. And describe for us the mechanisms by which

that happened.

A. Well, I believe that dioxin escaped in particles. So as the water moved it in, either from the tidal action or after it goes beneath the surface of the river, then the water can mobilize or move particles which dioxin is attached to.

The other form is dissolved. So dioxin, as we've seen, very low concentrations in water, but that dissolved dioxin, if you put it in contact with the river, will exchange with that water and then go down the river, as well, in a dissolved form.

The third form of these really tiny particles we talked about before, the colloidal particles that give water that brown or yellow color, and dioxin can also attach to those and move out of the waste material, as well.

Q. Do you believe those mechanisms were at large every day from the period of that photograph in 1973 through March 30th of 2008?

A. As long as there was water in contact with the surface of the waste, those mechanisms are happening.

Q. Thank you. Now, we just spent some time going going through Exhibit No. 5-41, that map and then this table at 5-43(a). Here is the question I want to ask: Does that map and this table support your opinions about

how dioxin was released from the impoundments?

A. Yes, it does.

Q. How does -- how does it support your opinion on that?

A. Well, what it shows is if you go up river -- so, again, this is downstream. I'm moving from Lake Houston Dam down to the Ship Channel, confluence with the Ship Channel. Note the concentrations here: Low, .001. Here, it starts going up a little here. And right when it gets over the impoundments -- this line represents the impoundments -- at this point these samples were taken in 2002, 2004, when the waste pits had already gone beneath the water. So you take a boat, you get on top of one of those and take a sample, what you immediately see is the dissolved dioxin, okay, in this top chart is two orders of magnitude higher at this spot than it is further upstream.

Q. Okay. Let's stop right there. When you say "two orders of magnitude higher," what does that mean?

A. Well, that means like 1 to 10 is one order of magnitude and then 1 to 100 is two orders of magnitude. So the concentrations immediately above the impoundments is a hundred times higher than they were elsewhere in the river.

Q. And, again, in that top portion of this graph,

what -- what type of dioxin are we looking at?

A. This is dissolved and probably also measures the colloidal. We don't have a really great way of separating those really tiny particles. So usually when we measure dissolved, we kind of lump those two things together; but in this case it's dissolved and the measurement would have measured both dissolved and the colloidal fraction.

Q. Okay. In the dissolved state?

A. Yes.

Q. So even though dioxin is very hydrophobic, you can still measure it dissolved in water?

A. Yes.

Q. And that's what this graph shows?

A. It does.

Q. Now let's talk about the bottom table. Let's go to the -- the horizontal axis. What is that?

A. So in the same way it's river mile, the same orientation. Here is the -- the impoundments is here (indicating). Here is zero, where the river runs into the Ship Channel.

Q. Let's back you up a little more. How do we know that's where the impoundments are? Do we go back to the map?

A. Well, it's marked; but you can go back to the

map and see the impoundments are between mile-marker 2 and 3.

MR. WOTRING: I'm sorry, Brian, the earlier page.

A. So, again, you'll see here, here is the I-10 bridge again, and here is the 2 mile-marker and the 3 mile-marker. So the impoundments are kind of right between the 2 and the 3 mile-markers on the way, as they set up this map.

MR. WOTRING: Okay. Scroll back out, please.

A. So, if you count across here, this is zero, 1, 2, 3, 4, 5. So between the 2 and the 3 is where the impoundments are.

Q. And what is it showing on the bottom -- let's scroll over to the vertical axis. What is that showing?

A. That's the dioxin that's associated with particles. So the way that you would measure this is you would take a water sample and filter it. You would take it and pass it through a filter paper and collect those particles on the surface of that filter paper. Then you would measure what the concentration of dioxin was on the particles that were actually in the water.

Q. And what did they -- did they do that?

A. They did.

Q. And what does it show?

A. So in the same way, if you're going upstream, you'll see lower concentrations. And then when you get right above the pits, themselves, it's two orders of magnitude, again, approximately here to here to here (indicating), so 1 to a hundred higher right above the impoundments. Again, this is 2002, 2004. 45 years after the waste was deposited here, you still see these mechanisms operating.

Q. And I don't know that we did this. When was the data collected for these two tables that we've been talking about?

A. 2002 and 2004 is the solid -- the solid line, and I think the open circles are more recently. That may be in the legend. I'm not sure of the date on the open circles.

Q. Okay. Let's look at Figure 212. Do you have a copy of that?

MR. WOTRING: Your Honor, may I approach?

THE COURT: Yes.

Q. (By Mr. Wotring) Okay. Did you look at Figure 212 in formulating your opinions in this case?

A. Yes, I did.

Q. All right. And, briefly, how does Figure 212 relate to your opinions in this matter?

A. It is a measurement of the dioxin that was present in the water associated with the waste and the waste pits, well after the period of time when the waste was disposed in this location.

Q. And what are we looking at?

A. Again, you're looking at the outline of the site and then you're looking at the -- what is left of the waste pit impoundments, which is marked here (indicating); and then they're colored kind of a mustard color.

Q. What kind of data is contained on Figure 212?

A. What it shows are -- what these color-coded things are, they represent places where they went to measure groundwater in the impoundments. So some of these were very deep samples where they measured the water and some of them were very shallow.

Q. Let's stop right there. We're introducing a new term, so we need to talk about it. What is groundwater?

A. So it's water held beneath the surface. Think about a bathtub full of sand and inside that sand, if we put water in it, that's what we call groundwater. That is what we drink a lot in a lot of states, and it may be well below, hundreds of feet below the ground, 40 feet below the ground. But it's really any water that's

beneath the surface and it's associated with a porous material, like sand or silt or in this case the waste material.

Q. And what -- what is surface water?

A. Surface water is water that, of course, is above that, you know, in a river or a lake or a pond that is not associated with the porous materials that are beneath the land surface.

Q. Maybe I made this too complicated. What would you call the San Jacinto River water?

A. Surface water.

Q. And the stuff when we drill for the drinking water, what is that?

A. Groundwater.

Q. So a drinking water well is groundwater; river is surface water?

A. Yes.

Q. What are they doing here in this graph?

A. What they're trying to show in this graph is trying to establish whether the groundwater around the site is contaminated. So whether people who, for example, would drill a drinking water well around the site would have a danger from being in contact with the chemicals.

Q. And what do the results show from the

investigation here on Figure 212?

A. Well, for the purpose of what I was asked to do, there is a key piece of information. Again, what I was asked to do was really to determine whether there was indication that dioxin was leaving the site. So I really focused in on this -- this measurement right here (indicating), which was a really shallow groundwater sample. It was taken about 2 feet below the surface of the waste.

Q. Well, this is my fault.

MR. WOTRING: Brian, can you zoom in?

Q. And can you tell me where to zoom in with your laser pointer?

A. It is like right here (indicating).

MR. WOTRING: Zoom in on that, Brian.

Q. We've got a bunch of letters and numbers and circles. Let's start with which is the groundwater well that you thought was important?

A. This here (indicating). This is San Jacinto Monitoring Well, SJMW. "S" stands for surface, so near the surface, and then the No. 4, so this location right here (indicating), which is in the middle of Pit No. 1 from our original -- original characterization.

Q. So when you drill different wells, you have to give them different names to keep track of the results?

A. Exactly.
Q. So these are just the way they picked to drill and name the wells?
A. Yes.
Q. And we're looking at different types of wells going to different levels in the western impoundment?
A. That's correct.
Q. And where is the one -- can we just call it 4?
A. Let's call it 4.
Q. Let's call it 4. Where is Well No. 4? Where is the target depth?
A. So it was about two feet below the ground. So the waste layer is sitting on top of the surface and they just wanted to see whether there was water inside the layer of waste and what the concentrations of dioxin were at that location.
Q. And when they -- how did they do that?
A. Well, in this case they didn't drill. They just took a pipe that had -- that was perforated, that had a sharp tip on it, and they just shoved that into the ground. And then the water that would have been there would have rushed inside the pipe, and then they sampled that by sucking the water through a tube that was placed inside the pipe.
Q. What do they call that pipe?

A. In this case they call this piezometers.
Q. Let's spell that.
A. P-i-e-z-o-m-e-t-e-r-s.
Q. And when they did that on Well 4, what did they find?
A. Well, they found very elevated concentrations of dioxin still in contact with the water that was within the waste.
Q. And is that a fact that you used in formulating your opinions?
A. It is, because it explains why in the previous graphs that we saw, we see that elevated dioxin level. If there is very high dioxin in the water that's in between the waste layer and that's releasing to the water over the top, then you are going to measure a lot of dioxin, if you drove your boat on top of this thing and took a sample.
Q. And is there any other page of exhibit -- or Figure 212 that we need to look at to understand your opinions on this?
A. If you want to see the concentrations, they're on the third page.
Q. Before we put that up, what is the figure title on the third page?
A. It says Table 5-6. It's the results of

groundwater sampling north of I-10. It's actually the last page. I'm sorry. I misspoke.

Q. Can I look at that for a second before we put that up?

A. Yes.

MR. WOTRING: Put that up, Brian.

Q. In which column do we need to look at for the readings from Well No. 4?

A. All the way to the right.

Q. That has the same figure as on the earlier page, SJMWS04?

A. Yes.

Q. And let's just orient everybody. All those readings are from that same well?

A. Yes.

Q. And then if we go back all the way to the left, what kind of -- what are we looking at? The different metals they were testing?

A. Right, the different metals they were testing for. Go further up, please.

We want to get on the next page, the fourth page. I'm sorry. There we go.

These are all different kinds of organic chemicals that would be hazardous in the environment. And the dioxins, of which there are many different kinds

of dioxin, they are listed here on this table.

Q. And which is the one that you used in formulating your opinions?

A. This one here (indicating) is the dioxin 2,3,7,8-TCDD, is the dioxin that is associated with paper mill waste.

Q. When we have been talking about dioxin previous to today, have we been talking about a particular type of dioxin named 2,3,7,8-TCDD?

A. Yes. We've been generalizing to that particular form.

Q. Can you tell us one time and one time only what TCDD stands for?

A. Tetrachloro -- so that means there's four chlorines on the molecule -- Dibenzodioxin, which is a long way to say "dioxin."

Q. If we go all the way back out to the right on that figure, what do those numbers show us?

A. So what you see in that water sample taken from within the waste, you just -- it's in the same units as before on the previous graph, picograms per liter -- you see it's all the way up there at 2700 in concentration. If you remember back from the previous graphs, those numbers were quite a bit lower than that; but this is a very elevated concentration of dioxin in that water

sample.

Q. Okay. And is that reading consistent with your opinions in this case?

A. It is important to establish my opinions as well.

Q. Why is that?

A. Because if there was no water in that waste material layer, or if the concentrations of dioxin were low in the water in that waste material layer, then the whole idea of dissolved dioxin being an important part of the transport mechanism just wouldn't fly. That wouldn't be one of the things that we could point to as a mechanism of release. But, again, this sample was taken 50 years after the event. The waste was put there and still you can measure these very elevated concentrations in the water.

Q. Now, does both the information contained in Figure 212 that we're looking at, which is out of Exhibit No. 298, and the information in Figure 5-4 as attached to Table 5-43(a), do you have an opinion about whether that information supports your opinions, Dr. Pardue?

A. It does. Both are important with respect to the dissolved and particulate mechanisms.

MR. WOTRING: Dr. Pardue, that is all the

questions I have.

THE WITNESS: Thank you.

THE COURT: All right. Counsel approach.

(Whereupon, after a bench discussion outside the hearing of the reporter and jury, the following proceedings were had:)

CROSS-EXAMINATION

QUESTIONS BY MR. SCHRADER:

Q. Dr. Pardue, good afternoon. I'm David Schrader. I represent International Paper.

A. Nice to meet you.

Q. You understand International Paper's involvement in this case is through Champion Paper, right?

A. I understand.

Q. So I'll be asking you some questions about Champion.

A. Yes.

Q. The good news is I think we're not going to keep you and the jury much longer this afternoon, but we're going to go a little bit. Okay?

A. Okay. No problem.

Q. Let me start with Exhibit 861, please. This is the -- do you remember you talked about this exhibit? It's the --

MR. SCHRADER: If we could just highlight the upper portion of the first page to reorient the jury.

Q. This is the State Department of Health document from May of 1966, correct?

A. Yes.

Q. All right.

MR. SCHRADER: And if we could go to the second page, please.

Q. Now, remember you read to the jury a part that you thought was important to your opinions; and that was the first paragraph of this page. Do you remember that?

A. Yes.

Q. All right. You did not read for the jury the second paragraph of this page, did you?

A. I don't recall.

Q. Okay. Well, let's look at the second paragraph. And this is talking about the material that was removed from the Champion site, right?

A. Yes.

Q. All right. Let's highlight the second paragraph and go through this part, this part that you didn't -- you didn't read on direct exam and go through this here.

A. Okay. Do you want me to read it?

Q. Would you mind? Can you read the first sentence there? We'll take them one at a time.
A. Sure. "The material appears to solidify rapidly and Mr. Henderson reported that a vertical wall can be cut in the ponds for removing it and that the wall will stand."
Q. Okay. So the material solidifies rapidly, such that when you cut it, it still -- it stands like a vertical wall, correct?
A. Yes.
Q. It's not like mud, right, Dr. Pardue?
A. No, no. It's still 60 percent water; but it's not like mud, right.
Q. All right. Now let's look at the next sentence here where this contemporaneous document is describing the material. Could you read that for us, please?
A. "It was also reported that after the material had set a short time, that water will not penetrate it."
Q. That water will not penetrate it, right?
A. Yes.
Q. That's what this document from 1966 says, the part that you did not read earlier, right?
A. Yes.
Q. All right. Let me ask you about another area of your testimony. Do you remember testifying on direct

examination that there were, quote, "No historical documents about what the berms were made of"?

A. Yes.

MR. SCHRADER: Could we go to Exhibit 4, please? I'm sorry, Exhibit 30, Tab 4.

Q. This is a letter -- the jury has seen this before and probably will see it again a few times -- from 1965 by Dr. Quebedeaux, who we're going to talk about. And could you read --

MR. SCHRADER: Actually, I'd like the second sentence, please, of the first paragraph.

Q. Could you read that second sentence, please, of the first paragraph?

A. "This is particularly so, since the bottom and sides, or dikes, are composed of clay, which should render it practically impossible for seepage to escape and enter in the San Jacinto River."

Q. And he's talking about the impoundments that we've been talking about in this case, right?

A. It is.

Q. All right. Now, you have some criticisms of the impoundments that you've offered to this jury, correct?

A. I do. I have, yes.

Q. And those impoundments are located on an area

of property that we've been talking about near the San Jacinto River, right?

A. Yes, they are.

Q. Do you recall that one of your assignments in this case was not only to serve as an expert witness, but also as a corporate representative for Harris County in this case?

A. I recall that, yes.

Q. And you understood that the answers you gave as part of that corporate representative deposition were binding on the County in this case, right?

MR. WOTRING: Your Honor, I object to the extent it's calling for a legal conclusion.

THE COURT: It's not to be taken as a legal conclusion.

A. I don't recall that, but I don't understand the question, actually.

Q. All right. You understood that you were appearing as the representative for Harris County to give testimony about the positions and claims that Harris County was making in this case, correct?

A. Yes.

Q. All right. Is it true, as a representative of Harris County, you know that Champion did not own the property on which those pits that we've been talking

about were located?
A. That's correct.
Q. You're aware that International Paper did not own that property, right?
A. I'm aware.
Q. And you're aware that Champion did not transport the waste from the Pasadena mill to the impoundments that we've been talking about, right?
A. That's correct.
MR. SCHRADER: Could we pull up Exhibit 1436, please?
Q. This 1436, you talked a little bit about this on your direct examination as the contract between Champion Paper and Ole Peterson Construction Company, right?
A. Yes.
Q. One of the documents that you relied on in forming your opinion in this case, right?
A. It was.
Q. All right. And I think -- I think we have a stipulation. You can't see this, but the date of this document is April 29, 1965.
A. Okay.
Q. Does that sound about right to you?
A. That sounds about right.

Q. Let me ask you to look, please, at Paragraph 6 of this agreement. You've read this before, right?

A. Yes, I have.

Q. Could you read Paragraph 6, please?

A. 6. "Independent contractor. In performing work hereunder, contractor will act in all respects as an independent contractor and will have full right and authority to determine the means and methods of carrying out the work."

Q. And when we're talking about the contractor here in this agreement, that's Ole Peterson, right?

A. It is.

Q. And this agreement provides that that work by Ole Peterson would be done with Ole Peterson as an independent contractor, right?

A. Yes. It says that in the contract, it does.

MR. SCHRADER: Let's just move ahead to the last page, Subparagraph (f).

Q. It provides here that "The contractor shall secure and keep in effect all permits and licenses required in connection with the performance of the work covered hereby, and shall comply with all governmental laws, rules and regulations, whether Federal, State or local, pertaining thereto." Is that right?

A. Yes.

Q. And as a representative of Harris County, Dr. Pardue, you agree that Champion was not responsible for maintaining the impoundments that you're talking about in this case?

MR. WOTRING: Your Honor, I'm going to object. He's not been designated as Harris County's corporate representative on that topic here today, nor do I think he was designated as that -- to cover that topic when he was designated as a corporate representative earlier.

THE COURT: All right. Counsel approach.

(Whereupon, after a bench discussion outside the hearing of the reporter and jury, the following proceedings were had:)

THE COURT: You may proceed, Mr. Schrader.

MR. SCHRADER: Thank you.

Q. Dr. Pardue, do you recall when you appeared as the corporate representative for Harris County in this case, and you were asked who was responsible for maintaining the pits, you did not identify Champion and you did not identify International Paper?

A. I recall that, yes.

Q. Now, there was another party that was involved with the design of the impoundments; and that was Harris

County itself, right?

A. I wouldn't say they were involved in the design. They were perhaps involved in the approval, but not the design.

Q. We've heard about Dr. Quebedeaux, the jury has, right?

A. Yes.

Q. And you know about his background and experience?

A. I do.

Q. You consider him to be a pollution expert?

A. At the time, yes.

Q. He was at the time in 1965, and that's the time frame we're talking about here when these impoundments were constructed, right?

A. Yes.

Q. And you know that he was physically at the property where the impoundments were constructed, right?

A. He was.

Q. And when he was there, he was the director of Air and Water Pollution Control for Harris County, correct?

A. He was.

Q. And you agree that his observations, given his experience, about what was going on should be credited,

right?

A. Some of them, yes.

Q. Only some of them?

A. Yes.

Q. And he was involved with the site from the very beginning, right?

A. Yes.

Q. And you're aware that Dr. Quebedeaux has testified that he was directly involved in helping design the impoundments?

A. I'm not aware of that.

Q. Let me ask you -- let's just talk briefly about depositions, because I don't think we've done this with the jury yet.

A. Okay.

Q. Before a case like this goes to trial, the parties have an opportunity to conduct discovery and learn about each other's positions, right?

A. Yes.

Q. And one of the ways they do that is through a deposition, right?

A. Yes.

Q. And that's an opportunity, like in your case, we could sit down across the table from you and ask you questions, right?

A. Yes.
Q. And in that process, although it's not always in a courtroom, sometimes it's in a conference room, you swear to tell the truth, just like you do when you are testifying in court, right?
A. I do, yes.
Q. And in this case you gave two depositions, right? One is as the representative of Harris County?
A. Yes.
Q. And another as an expert witness, right?
A. Correct.
Q. Okay. So let me ask you -- and I have some extra copies here of your deposition. I want to see if I can refresh your recollection of the question I just asked you.
A. Okay.
Q. So this will be from your expert witness deposition at Page 383, Lines 10 through 15; and I'll get a copy for you right now.
MR. SCHRADER: May I hand Dr. Pardue a copy of his transcript?
THE COURT: Yes.
Q. Here you go (document tendered).
A. Thanks.
Q. So this is your expert witness deposition, as I

said. And do you recall being asked this question and giving this answer:

"QUESTION: So Dr. Quebedeaux of Harris County says that he was directly involved in helping to design the waste pits in question, correct, sir?

"ANSWER: He makes that statement. He uses that word."

Correct?

A. Yes.

Q. And you agree that in certainly March of 1965, Dr. Quebedeaux was aware of the process that was going to be used to dispose of waste in these impoundments, right?

A. He had a general idea, I think.

Q. And he approved the process, right?

A. He did.

Q. And he knew exactly where the impoundments would be located?

A. He did, yes.

Q. Now --

MR. SCHRADER: Can y'all see that, if I put that here?

THE JURY: Yes.

Q. (By Mr. Schrader) So we talked about the contract that Champion eventually entered into with Ole

Peterson; and that was April 29, 1965, right?

A. Yes.

Q. I'm going to put that date down here.

Before -- before Champion ever entered into that contract with Ole Peterson, that independent contractor, Champion spoke to Harris County to make sure that the proposal, what the contractor was going to do, was okay with Harris County, right?

A. I don't believe I have that on my timeline.

Q. Let me see if I can help you out.

A. Sure.

Q. This is Exhibit 12.

MR. SCHRADER: Pull that up, please.

Q. This is a preadmitted document. Now, this is March 5th of 1965, so a little bit more than a month before the contract was entered into, right?

A. Right.

Q. March 5th, '65. And you can see that these are notes of a conversation that Champion had with Dr. Quebedeaux, right?

A. Yes.

Q. Let's just walk through what they discussed. No. 1, "Dr. Quebedeaux indicated an awareness of our potential contracting to dispose of sludge from the settling basins." Right?

A. Yes.

Q. 2, "Was asked and did view Burns' method of handling and disposing of sludge." Right?

A. Yes.

Q. Now, Burns is related to Ole Peterson? They're connected, as you understand it?

A. Yes.

Q. So that's who he is referring to there.

3, "He approved Burns' method of developing a pond and storing these waste materials at the mouth of the San Jacinto River. Dr. Quebedeaux went further to say that he had inspected the Burns' equipment and ventured an opinion that this equipment was the best he had seen." Right?

A. Yes.

Q. Finally 4, "He did not, by direct statement, indicate disapproval of any other method of disposal but he did say that the Burns' method was at this moment the most satisfactory of any that he knew of." Right?

A. I see that, yes.

Q. So before Champion ever even enters into this contract with Ole Peterson to handle this waste, there is a conversation with Dr. Quebedeaux of Harris County, who tells him that this is the best way to go, right?

A. Yes.

Q. Okay. So Champion gets that approval, proceeds ahead, enters into a contract with Ole Peterson. And that's not the end of Dr. Quebedeaux's involvement, right?

A. Right.

Q. All right. In fact, let's look at -- let's look at Exhibit 4, which is one we've looked at already. I'm sorry. I keep doing that. It's Exhibit 30, Tab 4. Exhibit 30. This is Defendants' Exhibit 30.

Now, this -- this is a letter of May of 1965 from Dr. Quebedeaux, correct?

A. Yes.

Q. And you have that in your timeline, right?

A. I do.

Q. So this is after -- after Champion gets approval from Harris County in a telephone conversation for proceeding as it proposed, after the contract is entered into; and now Dr. Quebedeaux begins having communications directly with the contractor, right?

A. Yes.

Q. And this letter here is addressed to Burma Engineering, the contractor, right?

A. Yes.

Q. May 25th of 1965. All right. And here again Dr. Quebedeaux tells the contractor the location seems

to be ideal. He says that "we viewed yesterday." So he went out to the site again, right?

A. Yes.

Q. And we talked about the next part where he says, "This is particularly so since the bottom of the dikes are composed of clay." Right?

A. Yes.

Q. And then he says, "I would like to remind you again that your -- that your waste handling operation should be done in a manner that would not allow liquid waste to leave the property." Right?

A. Yes.

Q. That's what he tells the contractor, right?

A. Yes.

Q. But he tells him again the location is ideal and the impoundments are, right?

A. Yes.

Q. All right. Let me move this back. I may come back to this. I'll fill in the date of that letter. That was May 25th. Okay. Thank you.

So we talked about your -- your work in this case and the fact that you were actually designated as a representative to testify on Harris County's behalf, right?

A. Yes.

Q. Have you ever been employed by Harris County?
A. I have not.
Q. Are you now?
A. No.
Q. No. And, in fact, you've not been hired by Harris County in this case. You've been hired by the outside lawyers, right?
A. I have.
Q. And they're paying you for your work in this case, right?
A. They are, yes.
Q. And the positions that Harris County is taking in this case you learned from the lawyers, the outside lawyers, right, in conversations with them?
A. Yeah, those and with some involvement from the Harris County attorneys as well, yes.
Q. Which Harris County attorneys?
A. Well, we had meetings with Mr. Owens and Mr. Wotring, yes.
Q. Both of whom are here?
A. Both of whom are here, yes.
Q. You did not learn any of the positions that Harris County is taking in this case from anyone else, like somebody from the Pollution Control Unit or anything like that, did you?

A. Not at all.

Q. You've never even spoken to those people at all, have you?

A. Not until later on, correct.

MR. SCHRADER: Your Honor, I promised you I would finish by 4:30. Now seems to be sort of a natural breaking point.

THE COURT: Ladies and gentlemen, we're going to let you go home on a Friday afternoon. We may do some more work. And we'll see you ready to start up on Tuesday morning at 9:30. We'll see you on the 21st ready to start up at 9:30. Have a great weekend.

(Evening recess)

THE STATE OF TEXAS
COUNTY OF HARRIS

I, Kimberly Kidd, Official Court Reporter in and for the 295th District Court of Harris County, State of Texas, do hereby certify that the above and foregoing contains a true and correct daily copy transcription of all portions of evidence and other proceedings requested in writing by counsel for the parties to be included in this volume of the Reporter's Record, in the above-styled and numbered cause, all of which occurred in open court or in chambers and were reported by me.

I further certify that this Reporter's Record of the proceedings truly and correctly reflects the exhibits, if any, admitted, tendered in an offer of proof or offered into evidence.

WITNESS my hand this the 17th day of October, 2014.

/s/ Kimberly Kidd
Kimberly Kidd, Texas CSR No. 2437
Expiration Date: 12/31/15
Official Court Reporter
295th District Court
Harris County, Texas
201 Caroline, 14th Floor
Houston, Texas 77002
(713) 368-6453

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$1 [1] - 140:10
$250 [1] - 41:24
$50,000 [1] - 140:10
$54,000 [1] - 42:6

'

'40s [2] - 57:23, 59:3
'65 [8] - 22:4, 25:10, 58:24, 123:4, 133:20, 133:21, 135:8, 178:18
'66 [2] - 22:7, 98:2
'73 [4] - 10:9, 11:7, 11:11, 118:19
'80s [1] - 29:25
'84 [3] - 108:18, 108:20, 111:21
'89 [3] - 107:5, 113:22, 113:24
'A' [1] - 135:14
'B' [1] - 135:13
'why [1] - 14:10

/

/s [1] - 184:21

0

0 [1] - 146:6
001 [1] - 154:9
0311299 [1] - 5:17

1

1 [37] - 1:1, 43:18, 43:22, 43:23, 43:24, 45:6, 45:9, 45:14, 46:10, 70:13, 73:1, 74:18, 85:3, 86:2, 89:3, 102:10, 104:17, 111:6, 113:15, 114:5, 115:6, 118:9, 118:10, 118:17, 119:17, 134:9, 145:17, 147:4, 154:20, 154:21, 156:12, 157:6, 160:22, 178:23
1.24 [2] - 105:4, 105:6
10 [15] - 18:20, 23:5, 55:10, 62:6, 69:2, 85:7, 85:9, 124:7, 146:17, 147:4, 150:19, 154:20, 176:18
10-mile [1] - 75:24
10.6 [1] - 123:22
10/15 [1] - 18:25
100 [3] - 54:18, 125:20, 154:21
1000 [1] - 3:15
1005 [10] - 96:20, 102:11, 103:21, 103:25, 105:13, 105:23, 105:25, 107:2, 110:18, 113:19
1019 [1] - 2:12
1050 [1] - 3:21
11.4 [1] - 123:21
110 [3] - 13:14, 54:23, 55:25
1100 [1] - 3:6
1111 [1] - 4:6
116 [1] - 25:5
11th [1] - 128:8
12 [2] - 26:19, 178:12
12/31/15 [1] - 184:22
125,000 [2] - 46:7, 46:19
12548 [1] - 2:19
130,000 [1] - 46:8
135 [3] - 7:19, 8:14, 131:10
135,000 [5] - 49:25, 74:4, 74:8, 121:10, 121:16
13th [3] - 23:4, 25:10, 73:4
143 [3] - 138:3, 138:14, 139:12
1436 [3] - 120:15, 171:11, 171:12
14th [1] - 184:24
15 [2] - 41:9, 176:18
15TH [1] - 2:12
16 [2] - 133:5, 135:10
17 [4] - 1:15, 79:22, 80:5, 81:6
17th [3] - 1:18, 5:1, 184:17
18 [4] - 59:13, 149:9, 149:15
187 [1] - 19:2
1947 [4] - 58:17, 63:4, 64:12, 64:21
1955 [11] - 18:11, 51:8, 55:5, 56:2, 57:22, 62:16, 64:2, 65:6, 65:10, 67:20, 125:14
1957 [1] - 64:6
1960's [1] - 96:8
1964 [3] - 106:7, 106:8, 106:11
1964/1965 [1] - 62:2
1965 [26] - 17:18, 17:24, 18:16, 23:5, 26:18, 26:22, 58:17, 62:16, 63:3, 73:2, 73:4, 84:14, 122:13, 126:7, 132:9, 133:8, 133:13, 135:7, 169:8, 171:22, 174:13, 177:10, 178:1, 178:15, 180:11, 180:24
1966 [16] - 12:25, 23:5, 26:23, 43:6, 86:14, 86:20, 87:1, 87:25, 88:9, 88:11, 90:20, 90:22, 98:5, 108:24, 167:5, 168:21
1968 [3] - 113:1, 138:4, 139:23
1973 [12] - 10:14, 12:25, 99:14, 107:4, 107:21, 108:7, 108:10, 110:19, 116:1, 117:22, 153:18
1985 [1] - 111:24
1989 [8] - 104:10, 105:10, 105:11, 106:14, 106:18, 106:20, 108:17, 129:21
1992 [4] - 9:4, 30:5, 30:6, 113:8
1994 [1] - 113:11
1997 [1] - 113:18
1998 [1] - 113:18
19th [1] - 138:4
1st [1] - 105:11

2

2 [39] - 24:12, 43:22, 44:17, 44:19, 45:4, 45:9, 45:14, 61:23, 62:4, 69:1, 70:18, 70:21, 70:23, 74:18, 85:3, 86:1, 98:9, 104:13, 104:17, 105:16, 105:23, 111:6, 111:25, 113:20, 114:2, 118:9, 118:10, 118:14, 119:14, 119:17, 143:12, 145:19, 156:1, 156:6, 156:8, 156:13, 160:8, 179:2
2,3,7,8-TCDD [2] - 164:5, 164:9
20 [3] - 35:4, 46:17, 59:13
20-acre [1] - 106:24
200 [1] - 42:3
2002 [4] - 113:18, 154:12, 157:7, 157:13
20036-5306 [1] - 3:22
2004 [3] - 154:12, 157:7, 157:13
2005 [2] - 6:3, 6:18
2006 [1] - 6:7
2008 [4] - 105:19, 118:12, 118:20, 153:19
201 [1] - 184:24
2011-76724 [1] - 1:2
2014 [4] - 1:15, 1:18, 5:1, 184:18
202.955.8500 [1] - 3:22
211 [1] - 19:2
211A [1] - 19:3
212 [7] - 157:17, 157:22, 157:24, 158:11, 160:1, 162:19, 165:18
215 [1] - 17:13
216 [8] - 17:11, 17:12, 17:14, 17:15, 18:12, 18:14, 18:15, 19:3
217 [1] - 19:3
21st [4] - 51:8, 55:5, 65:6, 183:11
22 [1] - 98:5
221 [1] - 19:3
222 [1] - 19:3
22nd [3] - 88:9, 91:2, 91:4
2353 [1] - 68:6
2354 [1] - 70:18
24 [2] - 49:7, 132:2
2437 [1] - 184:21
25TH [1] - 4:6
25th [3] - 128:8, 180:24, 181:20
26 [1] - 49:1
2700 [1] - 164:22
289 [1] - 19:3
28th [1] - 133:13
29 [2] - 171:22, 178:1
291 [1] - 29:2
295th [2] - 184:4, 184:23
295TH [1] - 1:11
298 [4] - 141:6, 141:11, 143:9, 165:19
2:00 [1] - 116:12

3

3 [35] - 43:22, 44:20, 44:22, 45:1, 45:9, 45:15, 46:12, 70:21, 70:23, 74:18, 85:1, 85:4, 85:22, 85:23, 86:3, 104:13, 104:17, 105:16, 111:6, 111:25, 114:3, 118:9, 118:10, 118:14, 119:17, 143:12, 145:22, 156:2, 156:7, 156:8, 156:13, 179:9
3-foot [1] - 46:11
30 [5] - 133:8, 169:5, 180:8, 180:9
300 [1] - 69:1
301 [1] - 138:23
30th [4] - 105:19, 118:12, 118:20, 153:19
31 [5] - 43:4, 43:5, 70:14, 83:5, 127:6
34 [1] - 49:3
368-6453 [1] - 184:25
38 [5] - 46:19, 46:22, 47:4, 50:1, 121:14
383 [1] - 176:18
386 [2] - 115:17, 115:21
3rd [1] - 135:16

4

4 [17] - 24:9, 24:12, 25:6, 88:23, 156:13, 160:21, 161:8, 161:9, 161:10, 162:4, 163:8, 169:4, 169:5, 179:16, 180:7, 180:8
40 [2] - 124:4, 158:24
400 [2] - 54:24, 55:25
4000 [1] - 3:15
4024 [1] - 77:3
403 [1] - 11:16
4213 [2] - 90:3, 90:9
4214 [1] - 89:9
43 [14] - 18:11, 24:7, 50:23, 51:5, 51:7, 53:1, 55:14, 56:25, 57:7, 61:18, 61:23, 62:5, 63:25, 65:5
44 [2] - 136:6, 137:15
45 [1] - 157:7
45-43(a [1] - 148:18
47 [3] - 66:21, 66:25,

125:19
4:30 [1] - 183:6

5

5 [4] - 96:3, 121:21, 146:15, 156:13
5-4 [1] - 165:19
5-41 [3] - 141:6, 143:9, 153:23
5-43(a [3] - 144:19, 149:16, 165:20
5-43(a) [2] - 143:22, 153:24
5-43(b) [1] - 149:16
5-6 [1] - 162:25
50 [4] - 46:17, 54:18, 125:9, 165:14
512-463.2012 [1] - 2:20
53 [1] - 125:21
5300 [1] - 3:6
56 [2] - 52:18, 66:12
5th [5] - 17:18, 17:24, 18:16, 178:15, 178:18

6

6 [4] - 46:18, 172:1, 172:4, 172:5
60 [3] - 38:18, 67:3, 168:12
60-plus [1] - 38:18
600 [1] - 2:5
63 [2] - 65:13, 67:7
65 [1] - 67:3

7

7 [8] - 26:17, 49:7, 52:7, 65:7, 65:12, 65:25, 124:2, 124:3
700 [1] - 2:5
713 [1] - 184:25
713.650.8805 [1] - 3:7
713.651.2663 [1] - 4:7
713.755.7880 [1] - 2:13
713.890.5000 [1] - 3:16
713.980.1713 [1] - 2:6
73 [1] - 80:21
75,000 [1] - 121:19
77002 [5] - 2:6, 2:12, 3:6, 3:16, 184:24
77002-5242 [1] - 4:6
78711-2548 [1] - 2:19

8

8 [1] - 5:7
8-A [1] - 115:20
8-D [2] - 116:9, 116:10
851 [1] - 122:1
858 [9] - 68:6, 69:19, 70:18, 79:13, 81:7, 81:11, 85:4, 85:8, 91:8
861 [22] - 71:16, 71:19, 71:22, 71:25, 72:6, 72:10, 73:15, 73:22, 74:1, 76:2, 76:3, 76:6, 76:12, 81:5, 81:11, 83:24, 85:21, 89:9, 97:6, 109:8, 109:15, 166:23
88 [1] - 18:25

9

93 [5] - 52:6, 65:7, 66:1, 66:11, 67:7
9:30 [2] - 183:11, 183:12

A

A&M [1] - 64:21
abandoned [2] - 140:7, 140:14
Aberdeen [1] - 35:11
ability [1] - 152:11
able [16] - 10:25, 12:16, 17:3, 27:10, 42:11, 45:17, 50:11, 78:11, 84:22, 93:9, 112:15, 112:18, 122:24, 130:1, 134:25, 151:8
above-entitled [1] - 1:18
above-styled [1] - 184:10
absolute [1] - 8:7
absolutely [6] - 8:8, 17:16, 21:14, 22:13, 84:5, 103:18
academic [2] - 32:14, 32:19
accept [1] - 39:5
accordance [1] - 81:9
according [2] - 66:19, 98:18
accurate [1] - 59:1
accused [1] - 85:5
acknowledgment [1] - 139:8
acres [4] - 26:19, 49:23, 106:23, 106:25
act [1] - 172:6
acting [1] - 1:5
action [1] - 153:4
activities [11] - 29:20, 31:5, 31:6, 33:15, 33:17, 35:14, 86:20, 87:13, 122:13, 140:7, 140:15
activity [2] - 33:5, 122:10
actual [4] - 57:25, 59:8, 59:14, 103:13
add [8] - 6:14, 47:2, 47:6, 47:22, 52:16, 96:5, 123:2, 124:6
adding [2] - 37:20
addition [5] - 34:24, 47:3, 80:20, 87:4, 149:11
additional [4] - 98:17, 98:19, 133:25, 135:7
address [15] - 12:4, 14:24, 16:21, 23:20, 50:22, 57:16, 59:3, 60:18, 82:22, 86:11, 90:25, 93:19, 94:7, 95:18, 96:13
addressed [3] - 87:7, 88:6, 180:21
addressing [4] - 94:2, 117:4, 117:6, 117:7
adjacent [10] - 21:3, 26:20, 75:18, 114:22, 114:25, 115:7, 117:22, 118:18, 119:2, 128:5
admissible [1] - 10:24
admit [2] - 58:8, 91:15
admitted [7] - 19:2, 26:5, 80:4, 81:11, 96:19, 96:21, 184:15
adopted [1] - 140:1
Adriens [1] - 148:19
Adriens-Johns [1] - 148:19
advanced [1] - 5:21
advisable [1] - 16:7
aerial [18] - 41:4, 43:6, 96:21, 105:20, 106:3, 107:1, 107:10, 107:15, 107:18, 107:25, 108:9, 108:15, 111:20, 113:18, 129:23, 130:6, 140:17, 143:13
aerially [1] - 113:3
affects [1] - 130:13
afternoon [4] - 134:23, 166:9, 166:20, 183:9
ago [2] - 15:7, 73:1
agree [9] - 12:2, 13:1, 18:17, 18:18, 86:7, 90:3, 173:2, 174:24, 177:10
agreed [2] - 24:1, 78:10
agreement [11] - 19:6, 19:13, 78:19, 79:7, 79:9, 81:9, 87:18, 120:23, 172:2, 172:11, 172:13
agreements [2] - 78:7, 78:8
agrees [1] - 86:6
ahead [5] - 47:10, 77:22, 135:24, 172:17, 180:2
aid [1] - 123:8
air [2] - 122:11, 174:21
allegations [1] - 24:4
allege [1] - 18:2
alleged [1] - 21:2
allow [1] - 181:10
allowed [3] - 66:23, 73:11, 99:23
allowing [2] - 121:15, 140:23
allows [2] - 100:19, 151:16
alluvial [5] - 125:25, 126:1, 130:19, 130:24
almost [1] - 91:6
alone [1] - 98:12
AMANDES [1] - 3:18
amount [19] - 5:12, 8:5, 12:15, 12:20, 13:10, 18:1, 19:18, 20:1, 20:2, 24:4, 37:25, 49:24, 99:1, 106:14, 106:17, 106:19, 120:25, 121:3, 130:11
amounts [8] - 45:21, 48:25, 56:8, 65:17, 73:7, 73:24, 147:24, 147:25
ample [1] - 87:21
analogy [1] - 49:3
analyses [1] - 56:22
analysis [6] - 36:19, 56:15, 56:19, 68:18, 74:11, 109:19
AND [4] - 1:10, 2:10, 3:4, 3:20
ANSWER [1] - 177:6
answer [5] - 21:24, 55:18, 119:1, 123:18, 177:2
answered [1] - 83:22
answers [1] - 170:9
ANTHONY [2] - 2:21, 3:9
anxious [1] - 89:12
apart [4] - 88:22, 107:8, 111:3, 126:14
apologies [1] - 76:20
apologize [2] - 85:14, 146:4
appear [3] - 98:15, 147:5, 151:13
appeared [1] - 173:18
appearing [1] - 170:19
appendix [1] - 116:6
application [4] - 77:12, 86:15, 86:17, 86:22
applied [1] - 65:16
applies [1] - 64:13
apply [2] - 59:12, 65:14
appreciate [2] - 61:3, 151:7
approach [13] - 50:24, 57:10, 68:7, 76:15, 77:17, 122:5, 137:21, 138:9, 141:3, 148:6, 157:19, 166:3, 173:11
approached [2] - 14:9, 14:19
approval [3] - 174:3, 180:1, 180:16
approved [4] - 54:24, 56:1, 177:15, 179:9
approximate [1] - 54:5
April [10] - 86:24, 88:9, 91:2, 91:4, 91:10, 98:5, 105:10, 108:24, 171:22, 178:1
aquatic [1] - 69:7
area [18] - 31:16, 43:7, 54:9, 75:16, 90:23, 102:15, 105:15, 106:10, 108:2, 108:3, 108:4, 114:10, 115:6, 141:23, 143:17, 143:18, 168:24, 169:25
areas [2] - 39:21, 103:13
argue [1] - 10:25
argued [1] - 8:13

arguing [3] - 8:14, 88:3, 93:6
argument [8] - 7:25, 9:12, 11:14, 13:10, 13:11, 78:14, 82:9, 149:25
arguments [3] - 5:24, 7:10, 11:18
Arkansas [1] - 34:1
Army [1] - 35:12
article [1] - 39:17
articles [3] - 38:16, 38:19, 39:13
aspect [1] - 53:13
asset [1] - 140:8
assigned [2] - 21:6, 21:11
assignments [1] - 170:4
ASSISTANT [2] - 2:14, 2:21
assisted [1] - 1:21
associated [6] - 73:8, 156:17, 158:2, 159:1, 159:7, 164:5
assuming [1] - 138:11
attach [2] - 100:17, 153:15
attached [4] - 96:20, 133:12, 153:6, 165:20
attachments [1] - 71:24
attempted [1] - 84:25
attempting [5] - 17:25, 79:1, 79:25, 80:23, 96:6
attention [2] - 7:5, 116:13
ATTORNEY [4] - 2:11, 2:14, 2:18, 2:21
attorneys [2] - 182:16, 182:17
attract [1] - 33:25
August [9] - 17:18, 17:24, 18:16, 88:10, 113:1, 126:7, 135:7, 138:4, 139:23
AUSTIN [1] - 2:19
authenticated [1] - 6:11
authority [1] - 172:8
availability [1] - 55:1
available [2] - 45:24, 109:20
AVENUE [1] - 3:21
average [3] - 66:20, 66:24, 123:20
avoid [1] - 83:19
aware [8] - 26:1, 87:13, 171:3, 171:5, 171:6, 175:8, 175:11, 177:11
awareness [1] - 178:23
axis [13] - 144:23, 145:1, 145:5, 146:10, 146:15, 146:20, 146:21, 146:22, 146:23, 147:10, 155:17, 156:16

B

background [2] - 29:3, 174:8
bacteria [1] - 69:5
badly [1] - 100:17
Baker [1] - 1:19
BAKER [6] - 2:4, 2:8, 6:8, 7:12, 8:14, 9:16
BALLESTEROS [1] - 3:10
bank [1] - 126:3
barge [10] - 26:21, 54:10, 65:15, 67:9, 75:7, 75:11, 75:18, 75:20, 75:22, 75:25
barged [1] - 75:20
barges [1] - 90:14
barging [3] - 54:12, 54:20, 86:4
bark [2] - 47:21, 49:19
BARRETT [1] - 3:8
base [2] - 35:12, 47:24
based [17] - 6:11, 10:18, 11:5, 11:10, 16:24, 50:10, 50:15, 50:20, 53:10, 53:17, 55:14, 57:4, 63:8, 65:5, 83:5, 136:25, 137:12
basin [9] - 17:21, 49:16, 49:20, 73:9, 124:1, 124:2, 135:14, 135:15, 135:21
basing [1] - 60:18
basins [15] - 20:6, 49:23, 50:3, 52:3, 52:8, 53:18, 53:21, 54:2, 67:8, 75:15, 121:12, 122:25, 125:10, 135:23, 178:25
basis [8] - 56:9, 99:15, 100:7, 129:25, 149:19, 151:5, 151:9, 151:18
bathtub [1] - 158:21
Baton [2] - 29:8, 35:3
Bayou [5] - 86:17, 87:14, 88:4, 88:5, 88:9
become [1] - 110:23
becomes [1] - 111:2
Bedient [10] - 8:3, 8:6, 23:2, 116:22, 116:23, 117:8, 117:10, 117:13, 117:17, 130:14
began [3] - 25:10, 25:12, 132:10
beginning [2] - 73:4, 175:6
begins [1] - 180:18
begun [2] - 73:1, 132:14
behalf [4] - 32:23, 33:1, 80:2, 181:24
behaves [2] - 36:24, 37:10
believes [1] - 23:16
belong [1] - 25:11
below [10] - 54:4, 55:22, 64:24, 105:6, 142:23, 158:24, 158:25, 160:8, 161:12
bench [10] - 57:12, 76:17, 77:19, 89:24, 132:23, 137:23, 148:8, 148:17, 166:4, 173:12
beneath [7] - 104:6, 104:18, 153:4, 154:13, 158:20, 159:1, 159:8
Benedict [2] - 15:5, 91:12
BENEDICT [12] - 2:21, 5:15, 6:1, 15:6, 15:11, 15:22, 16:10, 16:17, 17:1, 17:5, 91:11, 91:13
benefits [1] - 94:25
BENNETT [2] - 6:14, 6:22
berm [9] - 43:25, 44:2, 44:3, 44:7, 112:5, 127:3, 127:8, 127:11, 128:3
berms [17] - 44:11, 112:16, 119:5, 119:7, 119:22, 119:25, 120:3, 120:8, 120:9, 126:25, 130:6, 130:10, 130:14, 130:17, 134:24, 136:17, 169:2
best [2] - 179:13, 179:24
better [5] - 5:16, 31:15, 31:18, 40:2, 78:8
between [23] - 10:14, 12:25, 26:22, 29:20, 36:18, 43:25, 44:7, 46:7, 51:12, 106:22, 107:18, 117:16, 120:19, 123:12, 135:3, 137:8, 143:12, 147:3, 156:1, 156:8, 156:13, 162:14, 171:13
beyond [2] - 50:21, 123:15
big [8] - 39:15, 40:5, 49:8, 49:10, 49:16, 65:15, 102:3, 103:1
bigger [5] - 101:20, 101:22, 101:24, 147:6, 147:19
billionth [2] - 147:18, 147:22
binding [2] - 23:5, 170:11
biochemical [1] - 68:21
biodegradation [1] - 39:18
biology [1] - 30:2
bit [17] - 35:19, 48:7, 56:21, 63:25, 67:16, 67:18, 99:9, 116:16, 134:22, 142:6, 143:16, 150:9, 164:24, 166:21, 171:12, 178:15
bits [1] - 100:22
black [8] - 7:14, 24:13, 60:24, 70:5, 84:20, 88:8, 143:1, 143:2
bleached [2] - 48:6, 48:11
blow [6] - 55:22, 104:22, 108:2, 109:12, 109:14, 121:5
blowing [2] - 104:24, 134:11
board [5] - 68:10, 138:3, 138:8, 139:23, 140:19
boat [3] - 75:24, 154:13, 162:16
BOCKIUS [1] - 3:15
BOD [1] - 68:21
bodies [1] - 44:5
body [3] - 69:3, 69:4, 76:11
book [1] - 140:9
books [1] - 140:9
boring [6] - 127:1, 127:10, 127:16, 128:1, 128:2, 128:22
borings [4] - 119:20, 127:15, 130:21, 130:23
bottom [18] - 24:14, 37:21, 38:1, 49:20, 80:11, 98:4, 98:9, 98:11, 98:13, 115:13, 138:22, 139:25, 144:23, 145:11, 155:16, 156:15, 169:14, 181:5
bounce [1] - 34:25
bound [2] - 74:4, 105:5
boundaries [3] - 106:8, 106:10, 108:19
boundary [3] - 106:13, 142:11, 143:3
BOX [1] - 2:19
box [2] - 46:10, 46:11
brainstorming [2] - 51:14, 51:15
breach [5] - 108:7, 112:5, 112:17, 116:12, 116:15
break [21] - 13:4, 25:17, 27:6, 27:8, 27:14, 27:15, 27:16, 27:18, 57:16, 68:23, 69:5, 77:25, 78:1, 78:6, 96:17, 99:22, 108:1, 108:2, 124:23, 132:18, 132:21
breaking [2] - 111:3, 183:7
breaks [2] - 48:2, 125:4
BRIAN [1] - 3:11
Brian [14] - 77:22, 104:22, 109:7, 110:17, 113:7, 115:17, 134:11, 141:12, 143:25, 146:4, 156:3, 160:11, 160:15, 163:6
Brian's [1] - 131:11
bridge [3] - 43:9,

145:20, 156:6
brief [1] - 97:18
briefly [7] - 15:6, 57:10, 84:1, 99:16, 111:19, 157:24, 175:12
bring [9] - 27:16, 32:20, 47:20, 57:17, 60:19, 62:24, 96:23, 112:19, 148:12
bringing [2] - 10:6, 126:8
broke [1] - 36:1
brought [2] - 59:17, 103:2
brown [3] - 70:5, 100:13, 153:14
BRUNS [1] - 3:5
building [1] - 113:4
built [1] - 35:6
bunch [1] - 160:16
burden [1] - 59:14
Burma [2] - 122:23, 180:21
burns [1] - 179:5
Burns' [3] - 179:2, 179:9, 179:12
burns' [1] - 179:18
butter [2] - 128:13, 128:14
buzz [1] - 13:4
BY [9] - 2:7, 2:14, 2:21, 3:8, 3:17, 3:23, 4:8, 97:8, 166:8

C

C-e-d-i-l-o-t-e [1] - 5:8
C-shape [1] - 44:22
calcium [1] - 56:23
calculate [3] - 19:17, 45:17, 46:3
calculated [2] - 46:13, 98:25
calculating [2] - 45:21, 67:22
calculations [4] - 65:14, 65:16, 67:9, 99:2
California [1] - 34:2
capacity [1] - 121:12
CAPITOL [1] - 2:19
carbonate [1] - 56:24
carbons [1] - 36:9
cardboard [13] - 48:17, 48:18, 67:18, 109:4, 109:5, 109:23, 110:4, 110:9, 110:12, 110:14, 110:22, 111:1, 125:3
care [5] - 10:17, 10:21, 95:16, 130:2, 150:22
career [1] - 29:5
careful [1] - 14:18
Caroline [2] - 1:19, 184:24
carried [2] - 72:19, 72:25
carries [1] - 62:11
carrying [1] - 172:8
Carter [1] - 92:10
CARTER [9] - 3:17, 21:24, 22:2, 22:6, 22:13, 25:7, 25:19, 92:24, 93:20
carton [2] - 109:4, 110:6
cartons [6] - 109:23, 110:4, 110:5, 110:9, 110:10, 110:12
case [79] - 11:1, 11:3, 11:5, 13:8, 15:8, 15:14, 16:4, 21:2, 21:4, 21:12, 24:2, 26:11, 32:15, 35:25, 40:6, 40:7, 41:1, 42:2, 42:4, 42:11, 50:11, 53:11, 57:5, 68:18, 69:20, 72:11, 73:17, 74:12, 74:25, 76:4, 79:6, 86:19, 87:8, 87:23, 91:19, 95:22, 96:19, 98:23, 99:4, 104:7, 105:1, 112:3, 116:19, 117:5, 120:24, 121:9, 124:10, 133:8, 133:18, 134:17, 137:1, 137:13, 138:15, 139:4, 140:12, 140:17, 155:6, 157:22, 159:2, 161:18, 162:1, 165:3, 166:13, 169:19, 170:5, 170:7, 170:11, 170:21, 171:18, 173:4, 173:20, 175:16, 175:23, 176:7, 181:22, 182:6, 182:10, 182:13, 182:23
cases [1] - 69:2
CAUSE [1] - 1:2
causing [1] - 93:5
caustic [1] - 47:24
ceased [2] - 86:15, 86:20
Cedilote [2] - 5:8, 6:16
center [3] - 31:9, 31:10, 31:13
central [4] - 33:25, 127:3, 127:7, 128:3
certain [7] - 11:23, 12:3, 32:11, 32:18, 63:6, 123:9, 142:23
certainly [8] - 104:7, 105:16, 107:8, 111:3, 113:3, 116:16, 144:21, 177:10
certify [2] - 184:5, 184:13
cetera [4] - 17:20, 36:2, 37:1, 109:23
chain [1] - 5:7
chair [1] - 32:1
chambers [1] - 184:11
Champion [39] - 42:20, 42:23, 42:25, 47:14, 47:15, 50:13, 53:12, 55:13, 55:23, 56:2, 72:14, 72:18, 76:7, 76:23, 89:18, 109:20, 120:12, 120:19, 120:22, 121:12, 122:11, 122:12, 123:13, 133:9, 166:13, 166:17, 167:19, 170:24, 171:6, 171:14, 173:2, 173:21, 177:25, 178:4, 178:6, 178:19, 179:21, 180:1, 180:15
Champion's [1] - 133:14
chance [2] - 80:14, 109:12
changed [3] - 58:16, 59:20, 60:1
Channel [5] - 75:19, 145:13, 154:7, 154:8, 155:21
characteristics [6] - 50:12, 68:15, 85:12, 87:6, 108:25, 124:13
characterization [1] - 160:23
characterized [1] - 51:16
charge [1] - 11:6
charges [1] - 83:20
chart [3] - 145:1, 148:2, 154:16
CHASE [1] - 2:5
chase [1] - 53:14
cheap [2] - 109:4, 110:20
cheaper [6] - 31:18, 54:19, 109:22, 110:3, 110:14, 110:22
chemical [9] - 35:7, 35:13, 35:24, 36:4, 37:14, 68:14, 117:7, 142:15, 144:13
chemicals [7] - 35:15, 47:25, 49:20, 117:18, 127:23, 159:24, 163:24
Chemosphere [1] - 39:17
Chesser [2] - 131:24, 131:25
chips [1] - 47:22
chlorinated [2] - 36:5, 36:6
chlorines [4] - 36:5, 36:10, 37:10, 164:15
chocolate [1] - 128:14
CHRIS [1] - 3:18
circles [3] - 157:14, 157:16, 160:17
circuiting [1] - 78:13
circular [1] - 127:17
citation [1] - 5:17
City [1] - 34:10
civil [4] - 28:19, 30:4, 31:22, 117:2
claim [1] - 84:9
claiming [1] - 85:11
claims [1] - 170:20
clarification [1] - 10:23
clarified [3] - 83:5, 92:15, 93:2
clarify [3] - 64:6, 93:22, 152:3
clay [16] - 119:25, 126:19, 127:25, 128:4, 128:20, 130:4, 130:10, 130:18, 131:2, 132:7, 132:10, 132:14, 134:24, 136:17, 169:15, 181:6
clean [3] - 31:15, 35:15, 40:3
cleaned [1] - 52:3
cleaning [6] - 13:19, 14:2, 31:19, 34:19, 35:9, 74:7
cleanup [2] - 34:15, 35:18
clear [16] - 11:12, 12:7, 13:5, 14:8, 16:7, 20:12, 24:18, 26:10, 59:10, 78:24, 79:4, 80:4, 100:14, 150:15, 151:21, 152:12
cleared [1] - 92:9
clearly [5] - 6:22, 22:10, 78:21, 80:12, 86:2
clears [1] - 16:3
closed [2] - 12:7, 126:7
closely [1] - 123:7
closer [2] - 54:23, 55:25
closing [1] - 15:17
co [2] - 31:11, 31:12
co-direct [1] - 31:11
co-director [1] - 31:12
Coast [2] - 33:25, 39:22
coast [1] - 40:4
coded [1] - 158:12
COLIN [1] - 3:10
collect [2] - 38:1, 156:20
collected [3] - 41:9, 54:2, 157:11
collects [1] - 37:20
college [2] - 30:2, 33:6
colloid [6] - 100:11, 101:13, 101:25, 102:3, 102:7, 114:17
colloidal [3] - 153:13, 155:3, 155:8
colloids [5] - 100:6, 100:22, 101:8, 101:21, 112:14
color [11] - 47:25, 70:2, 70:5, 71:7, 100:13, 100:16, 116:17, 118:4, 153:14, 158:10, 158:12
color-coded [1] - 158:12
colored [3] - 70:3, 70:6, 158:9
column [3] - 147:1, 149:11, 163:7
combination [1] - 20:9
coming [3] - 12:4, 60:22, 105:7
comment [2] - 9:16, 13:15
comments [6] - 6:17, 39:4, 39:6, 79:20, 149:18, 149:22
COMMISSION [1] -

1:5
communicate [1] - 132:1
communications [1] - 180:19
compacting [1] - 113:5
companies [2] - 89:12, 92:5
COMPANY [2] - 1:9, 3:14
company [4] - 73:3, 120:20, 122:23, 171:14
compare [7] - 5:11, 38:6, 62:16, 71:1, 71:3, 101:12, 106:16
compared [2] - 58:9, 149:14
compares [1] - 67:6
comparing [1] - 63:9
comparison [2] - 11:15, 102:6
compelled [1] - 13:22
complete [1] - 74:7
completely [8] - 14:20, 81:22, 99:24, 100:8, 105:16, 114:3, 139:9, 139:19
completion [1] - 98:19
complicated [1] - 159:9
complies) [2] - 97:24, 119:12
comply [1] - 172:22
composed [2] - 169:15, 181:6
composition [4] - 57:23, 58:5, 59:8, 60:11
compound [2] - 36:8, 37:18
compounds [1] - 100:18
compressed [1] - 48:10
compresses [1] - 52:9
computer [1] - 1:21
computer-assisted [1] - 1:21
computerized [1] - 1:21
concentration [4] - 146:25, 156:22, 164:22, 164:25
concentrations [10] - 149:23, 153:8, 154:8, 154:22, 157:3, 161:15, 162:6, 162:21, 165:8, 165:16
concept [3] - 124:17, 124:19, 149:1
concepts [1] - 125:6
concern [6] - 23:24, 26:4, 93:21, 93:25, 94:8, 151:2
concerned [2] - 15:8, 26:2
concerns [1] - 14:25
concluded [1] - 56:19
concluding [1] - 135:25
conclusion [4] - 118:22, 118:24, 170:13, 170:15
conclusions [1] - 55:2
conduct [2] - 5:12, 175:17
conducted [6] - 6:4, 26:22, 39:20, 64:14, 123:3, 140:15
confer [1] - 79:23
conference [1] - 176:3
conferring [1] - 152:14
confirm [3] - 63:12, 73:9, 111:25
confirmation [1] - 99:2
confirmed [2] - 98:6, 121:22
confirming [1] - 90:15
confirms [1] - 73:20
conflict [5] - 58:1, 59:2, 59:8, 59:15, 59:17
confluence [1] - 154:7
confuse [2] - 26:25, 27:10
confusion [1] - 79:2
CONGRESS [1] - 2:12
connect [1] - 23:23
connected [1] - 179:6
CONNECTICUT [1] - 3:21
connection [4] - 76:3, 136:3, 140:6, 172:21
connects [1] - 143:10
CONNELLY [1] - 2:4
consequently [1] - 126:15
consider [3] - 23:12, 136:13, 174:11
considered [2] - 36:12, 89:7
consisted [1] - 119:24
consistency [3] - 51:18, 109:3, 123:21
consistent [12] - 8:12, 13:8, 14:24, 16:1, 69:22, 74:11, 116:17, 126:17, 128:21, 129:1, 129:12, 165:2
consists [1] - 89:20
constructed [14] - 26:18, 70:24, 125:23, 125:24, 126:6, 129:19, 130:17, 132:11, 132:16, 134:2, 135:5, 135:6, 174:15, 174:18
construction [9] - 73:3, 119:19, 120:5, 120:6, 120:20, 126:9, 133:22, 133:24, 171:14
consultants [3] - 41:11, 127:2, 130:22
contact [6] - 126:22, 131:25, 153:9, 153:20, 159:23, 162:7
contain [1] - 132:3
contained [7] - 5:13, 68:21, 138:14, 139:22, 143:8, 158:11, 165:17
container [1] - 38:2
containment [1] - 100:2
contains [1] - 184:6
contaminate [1] - 35:2
contaminated [3] - 34:21, 100:5, 159:21
contemporaneous [1] - 168:15
contemporary [1] - 126:24
content [15] - 62:10, 62:17, 63:7, 63:11, 63:16, 64:3, 64:17, 65:4, 65:10, 66:20, 66:24, 67:13, 125:15, 125:18, 125:19
contention [1] - 25:9
context [2] - 57:6, 149:6
continue [5] - 63:21, 121:18, 123:7, 133:3, 152:19
continues [1] - 137:4
continuous [1] - 49:6
contract [12] - 21:6, 21:11, 120:19, 121:15, 171:13, 172:16, 177:25, 178:5, 178:16, 179:22, 180:2, 180:17
contracting [1] - 178:24
contractor [18] - 21:7, 45:20, 120:21, 123:13, 135:13, 135:17, 172:5, 172:6, 172:7, 172:10, 172:15, 172:19, 178:6, 178:7, 180:19, 180:22, 180:25, 181:13
contractors [1] - 123:9
Control [2] - 174:21, 182:24
control [2] - 24:11, 122:12
controls [1] - 36:13
controversial [1] - 32:15
conversation [4] - 53:2, 178:19, 179:23, 180:16
conversations [1] - 182:14
cooker [1] - 47:22
coordinate [3] - 31:3, 33:23, 34:3
coordinating [2] - 34:14, 34:17
copies [2] - 13:15, 176:13
copious [1] - 94:18
copy [11] - 21:22, 28:21, 71:17, 71:19, 122:3, 133:13, 138:12, 157:18, 176:19, 176:20, 184:6
COPY [1] - 1:14
core [1] - 127:17
corner [1] - 145:11
CORP [1] - 4:4
Corp [1] - 73:3
corporate [10] - 23:3, 23:6, 25:2, 25:7, 140:6, 170:6, 170:10, 173:7, 173:9, 173:19
corporation [4] - 138:17, 140:2, 140:5, 140:14
CORPORATION [1] - 1:10
Corporation [1] - 72:20
corporation's [1] - 140:8
correct [43] - 8:10, 33:3, 42:8, 42:9, 45:10, 45:16, 46:23, 54:10, 54:11, 54:14, 55:12, 58:7, 61:23, 63:14, 64:12, 65:22, 67:1, 67:24, 70:9, 71:14, 71:15, 72:5, 98:10, 101:9, 111:18, 130:16, 139:21, 141:19, 145:4, 161:7, 167:5, 168:9, 169:23, 170:21, 171:2, 171:9, 174:22, 176:11, 177:5, 177:8, 180:11, 183:4, 184:6
correctly [1] - 184:14
correspond [1] - 142:3
correspondence [1] - 40:13
cost [3] - 34:17, 55:1, 140:10
costs [2] - 54:5, 54:24
COUNSEL [5] - 2:3, 2:17, 3:4, 3:14, 4:3
counsel [12] - 5:10, 7:14, 8:2, 8:25, 13:13, 85:4, 87:16, 93:16, 137:21, 166:3, 173:11, 184:8
counsel's [2] - 9:11, 81:3
count [1] - 156:12
country [2] - 31:17, 34:17
county [1] - 170:11
COUNTY [6] - 1:4, 1:8, 2:3, 2:11, 2:14, 184:1
County [41] - 1:20, 5:6, 7:15, 8:15, 8:20, 9:9, 9:10, 10:9, 12:15, 14:25, 15:13, 16:9, 16:18, 23:6, 24:22, 28:2, 79:1, 95:9, 117:5, 170:6, 170:19, 170:21, 170:24, 173:1, 173:19, 174:1, 174:21, 176:8, 177:4, 178:6, 178:8, 179:23, 180:16, 182:1, 182:6, 182:12, 182:16, 182:17, 182:23,

184:4, 184:23
County's [3] - 27:1, 173:6, 181:23
couple [9] - 7:9, 15:7, 39:19, 50:2, 52:11, 101:14, 125:16, 134:21, 140:25
course [5] - 7:16, 9:7, 33:6, 114:11, 159:5
Court [4] - 184:3, 184:4, 184:22, 184:23
COURT [178] - 1:2, 1:4, 5:3, 5:25, 6:20, 6:24, 7:7, 8:6, 8:12, 9:5, 9:8, 9:24, 11:4, 11:10, 11:19, 12:18, 12:21, 13:3, 13:6, 14:4, 14:12, 14:15, 15:5, 15:10, 15:19, 15:24, 16:15, 16:23, 17:2, 18:15, 18:21, 19:8, 19:11, 19:23, 20:12, 20:20, 20:23, 21:16, 22:17, 22:22, 23:13, 23:22, 24:16, 24:18, 24:24, 25:1, 25:16, 26:1, 26:12, 27:3, 27:12, 27:20, 28:4, 28:12, 50:9, 50:19, 50:25, 55:20, 57:11, 57:15, 57:20, 58:4, 58:8, 58:18, 58:25, 59:16, 59:24, 60:7, 60:9, 60:17, 61:2, 61:6, 61:12, 62:20, 62:23, 63:8, 63:14, 63:17, 63:20, 64:8, 68:8, 76:16, 77:18, 77:24, 78:4, 78:18, 79:7, 79:12, 80:3, 81:11, 81:20, 81:24, 82:6, 82:9, 82:19, 82:22, 83:8, 84:4, 84:18, 85:16, 85:22, 85:25, 86:5, 86:9, 86:25, 87:2, 87:22, 88:3, 88:20, 89:2, 89:4, 89:10, 89:17, 89:22, 90:2, 90:8, 90:24, 91:3, 91:7, 91:9, 91:12, 91:17, 91:24, 92:15, 92:25, 93:18, 93:24, 94:17, 94:23, 95:3, 96:3, 96:11, 96:16, 96:18, 96:23, 97:1, 102:20, 102:25, 103:18, 115:3, 118:23, 119:1, 122:6, 123:17, 129:3, 129:15, 131:13, 132:20, 133:1, 136:23, 137:7, 137:21, 138:1, 138:10, 141:4, 148:7, 148:11, 148:15, 148:21, 149:10, 149:24, 150:7, 150:14, 150:20, 150:24, 151:10, 152:1, 152:8, 152:10, 152:15, 152:18, 157:20, 166:3, 170:14, 173:11, 173:15, 176:22, 183:8
court [16] - 7:18, 10:10, 11:21, 12:1, 27:8, 33:16, 78:14, 78:15, 78:16, 79:4, 81:10, 84:21, 87:12, 96:2, 176:5, 184:11
Court's [2] - 7:5, 18:24
court's [4] - 7:10, 11:5, 11:11, 151:7
courtroom [3] - 57:19, 117:10, 176:3
cover [1] - 173:8
covered [2] - 72:17, 172:22
CRAIG [1] - 3:18
create [1] - 14:21
created [1] - 19:21
creates [1] - 13:20
credited [1] - 174:25
criticisms [1] - 169:21
criticize [1] - 39:4
CROSS [1] - 166:7
CROSS-EXAMINATION [1] - 166:7
CRUTCHER [1] - 3:21
CSR [1] - 184:21
cubic [10] - 46:7, 46:8, 46:9, 46:19, 49:25, 74:4, 74:8, 121:10, 121:16, 121:19
cup [1] - 128:13
cured [1] - 94:8
current [2] - 90:14, 114:12
cut [2] - 168:5, 168:8
cutting [1] - 23:10
CV [4] - 28:22, 28:23, 30:11, 31:8

D

D.C [1] - 3:22
DAILY [1] - 1:14
daily [5] - 8:11, 56:9, 99:15, 100:7, 184:6
Dam [2] - 141:24, 154:7
damage [1] - 135:8
danger [1] - 159:23
DANIEL [1] - 3:23
data [11] - 41:8, 62:14, 64:13, 126:25, 129:1, 129:9, 129:11, 145:12, 157:11, 158:11
Date [1] - 184:22
date [17] - 64:6, 64:8, 86:13, 90:17, 97:25, 105:9, 107:21, 115:24, 116:15, 118:19, 133:22, 135:5, 140:18, 157:15, 171:21, 178:3, 181:19
dated [3] - 17:18, 55:5, 133:13
dates [7] - 59:3, 72:24, 73:7, 73:8, 73:9, 90:17, 97:19
datum [1] - 142:23
David [1] - 166:9
DAVID [2] - 2:8, 3:19
day's [2] - 52:16, 52:17
day-to-day [1] - 37:17
days [1] - 49:7
deal [4] - 49:8, 49:9, 49:10, 58:25
dealing [1] - 79:10
deals [1] - 79:24
dealt [4] - 27:23, 79:5, 79:16, 97:2
DEBRA [1] - 2:8
decade [1] - 55:8
December [8] - 84:14, 88:7, 132:9, 133:8, 133:13, 133:20, 135:8
decide [2] - 27:5, 95:11
decided [1] - 78:6
decision [3] - 32:16, 40:17, 78:16
decisions [1] - 33:10
deep [4] - 46:18, 127:20, 158:15
deepwater [1] - 40:1
defendant [1] - 5:10
DEFENDANT [3] - 3:4, 3:14, 4:3
Defendants [1] - 1:11
defendants [4] - 6:10, 14:16, 57:24, 94:13
defendants' [1] - 95:10
Defendants' [4] - 5:7, 17:11, 81:5, 180:9
defined [2] - 83:4, 83:9
definition [1] - 38:5
degraded [1] - 36:1
degree [1] - 30:2
deleted [1] - 87:19
deliberately [1] - 83:19
demand [2] - 68:22, 71:7
department [3] - 97:19, 122:11, 122:12
Department [7] - 71:13, 73:15, 76:21, 97:11, 109:9, 111:15, 167:4
deposited [1] - 157:8
deposition [7] - 25:5, 148:20, 170:10, 175:21, 176:13, 176:18, 176:25
depositions [2] - 175:13, 176:7
depth [3] - 54:24, 56:1, 161:11
describe [6] - 29:18, 34:23, 36:3, 139:6, 152:4, 152:25
described [4] - 75:10, 109:3, 110:3, 110:21
describes [3] - 72:13, 73:18, 111:15
describing [2] - 130:23, 168:15
design [5] - 173:25, 174:3, 174:4, 175:10, 177:5
designated [4] - 173:6, 173:8, 173:9, 181:22
detail [1] - 99:17
details [2] - 55:1, 119:20
determine [3] - 42:11, 160:4, 172:8
determining [2] - 5:12, 108:7
develop [7] - 31:18, 34:15, 34:18, 40:15, 40:17, 99:5, 122:23
developed [4] - 25:12, 25:13, 35:13, 35:18
developing [1] - 179:9
developments [1] - 123:7
diagram [2] - 70:13, 127:4
diagrams [1] - 41:4
dibenzodioxin [1] - 164:15
difference [8] - 28:24, 44:7, 58:10, 107:17, 117:16, 137:7, 150:4, 150:5
differences [1] - 147:5
different [34] - 12:18, 12:21, 20:24, 23:13, 38:16, 38:24, 40:21, 45:24, 54:7, 66:7, 66:8, 78:9, 101:5, 101:10, 101:11, 106:4, 118:8, 124:17, 124:19, 125:2, 125:6, 128:4, 144:2, 147:3, 151:3, 160:24, 160:25, 161:5, 161:6, 163:17, 163:19, 163:23, 163:25
differently [1] - 67:16
dikes [4] - 132:2, 132:6, 169:15, 181:6
dioxin [78] - 8:8, 8:16, 12:15, 12:20, 13:15, 34:5, 34:13, 35:24, 36:3, 36:19, 36:22, 36:24, 37:3, 37:6, 37:7, 37:11, 38:7, 38:11, 40:20, 99:7, 99:13, 99:19, 100:5, 100:9, 100:16, 104:7, 111:6, 111:8, 111:17, 112:14, 114:7, 114:14, 114:16, 117:8, 118:13, 140:23, 142:15, 142:16, 144:3, 144:4, 144:6, 144:9, 144:21, 146:25, 147:13, 147:24, 148:3, 149:20, 150:19, 151:24, 152:23, 153:2, 153:6, 153:7, 153:9, 153:15, 154:1, 154:15, 155:1, 155:11, 156:17, 156:22, 158:1, 160:5, 161:15, 162:7, 162:12, 162:13,

162:16, 164:1, 164:4, 164:5, 164:7, 164:9, 164:16, 164:25, 165:8, 165:10
dioxin-contaminated [1] - 100:5
dioxins [2] - 149:4, 163:25
DIRECT [1] - 28:15
direct [5] - 31:11, 167:23, 168:25, 171:13, 179:16
directly [10] - 17:3, 84:13, 84:14, 92:6, 92:20, 93:9, 94:14, 175:9, 177:4, 180:19
director [5] - 30:12, 30:16, 31:2, 31:12, 174:20
directors [2] - 139:23, 140:19
disappear [1] - 69:6
disappeared [3] - 113:25, 114:1, 134:4
disapproval [1] - 179:17
discharge [12] - 69:25, 76:11, 83:1, 83:12, 84:12, 84:22, 90:19, 91:16, 91:22, 92:20, 93:9, 94:13
discharged [2] - 52:13, 92:5
discharges [1] - 82:18
discharging [7] - 76:24, 77:9, 80:18, 84:14, 92:11, 94:22, 95:12
discovery [1] - 175:17
discuss [1] - 76:6
discussed [7] - 15:7, 16:24, 61:21, 80:16, 132:18, 149:6, 178:22
discusses [1] - 56:11
discussing [3] - 53:16, 53:19, 80:24
discussion [22] - 18:24, 57:12, 76:17, 77:19, 79:23, 81:12, 84:8, 84:21, 85:24, 87:3, 88:2, 89:24, 94:18, 119:5, 124:9, 124:10, 132:23, 137:23, 138:16, 148:8, 166:4, 173:12
discussions [1] - 135:16
disintegrate [2] - 132:11, 132:15
displayed [2] - 81:16, 83:25
disposal [23] - 22:3, 22:7, 51:14, 54:6, 54:8, 54:10, 54:18, 54:20, 54:25, 68:11, 72:18, 84:9, 89:13, 89:14, 89:18, 90:4, 90:11, 110:2, 122:18, 123:8, 133:14, 136:3, 179:17
dispose [4] - 55:15, 92:18, 177:12, 178:24
disposed [3] - 54:3, 73:13, 158:4
disposing [1] - 179:3
dispute [8] - 22:8, 22:11, 78:23, 81:18, 87:4, 90:20, 93:5, 95:21
dissolve [1] - 37:21
dissolved [19] - 38:4, 71:8, 114:17, 144:3, 144:7, 147:10, 148:2, 153:7, 153:9, 153:11, 154:15, 155:2, 155:5, 155:6, 155:7, 155:9, 155:12, 165:10, 165:24
dissolving [2] - 38:2, 112:14
distance [1] - 54:20
distant [1] - 54:18
distracted [1] - 117:15
District [2] - 184:4, 184:23
DISTRICT [2] - 1:4, 1:11
DIVISION [1] - 2:18
doctor [8] - 61:12, 62:23, 76:20, 115:18, 133:2, 133:6, 135:12, 138:6
document [83] - 5:13, 5:18, 5:25, 6:13, 6:15, 9:6, 18:5, 18:10, 18:16, 19:19, 20:15, 21:13, 21:18, 21:23, 22:21, 25:18, 26:5, 27:15, 50:20, 51:8, 51:10, 55:5, 55:10, 55:24, 56:2, 56:4, 56:11, 57:22, 59:2, 60:16, 64:9, 65:21, 65:23, 66:19, 74:15, 76:22, 77:15, 78:15, 79:23, 80:9, 81:2, 81:4, 81:21, 82:24, 82:25, 84:4, 85:8, 85:10, 86:14, 87:8, 87:14, 88:21, 94:21, 97:7, 97:8, 102:10, 102:11, 102:14, 111:15, 120:16, 122:2, 122:7, 122:9, 122:15, 131:15, 134:6, 135:5, 136:7, 136:22, 137:3, 137:4, 137:8, 141:13, 142:13, 142:14, 167:4, 168:15, 168:21, 171:22, 176:23, 178:14
documentary [1] - 132:19
documents [55] - 7:14, 9:2, 9:4, 9:11, 9:13, 9:15, 9:19, 9:20, 10:3, 17:8, 20:5, 20:9, 20:13, 20:21, 20:22, 23:19, 26:15, 40:12, 40:24, 41:2, 50:6, 51:1, 53:7, 53:11, 57:4, 58:9, 59:5, 59:9, 60:10, 60:23, 65:19, 70:23, 73:19, 74:16, 74:25, 80:4, 81:8, 82:10, 83:19, 87:17, 103:14, 108:23, 111:14, 112:21, 120:2, 120:8, 126:12, 128:22, 137:10, 137:13, 140:16, 140:25, 169:2, 171:17
domestic [1] - 69:10
donated [1] - 32:2
done [29] - 6:12, 13:17, 13:18, 29:4, 34:20, 41:10, 41:17, 56:16, 57:25, 59:12, 71:2, 71:13, 71:21, 73:2, 83:7, 84:24, 88:9, 88:10, 98:1, 98:20, 104:8, 104:9, 104:10, 121:4, 127:1, 172:14, 175:13, 181:10
door [8] - 7:13, 9:15, 11:2, 13:23, 13:25, 14:6, 14:13, 94:3
down [36] - 17:21, 18:18, 19:2, 36:1, 48:2, 49:8, 49:17, 51:24, 52:11, 52:15, 53:22, 63:25, 68:23, 69:5, 72:15, 74:2, 75:25, 77:14, 77:23, 95:18, 103:16, 103:19, 105:7, 114:15, 114:16, 115:18, 115:19, 125:4, 127:20, 132:22, 142:23, 145:11, 153:10, 154:7, 175:24, 178:3
downstream [2] - 149:14, 154:6
dozen [1] - 42:6
Dr [55] - 8:6, 8:7, 12:25, 22:24, 23:2, 26:17, 28:4, 28:18, 60:19, 61:9, 61:17, 63:9, 74:20, 82:20, 88:22, 95:6, 96:6, 96:24, 97:9, 103:16, 109:17, 116:22, 116:23, 117:8, 117:10, 117:13, 117:17, 128:7, 128:15, 130:14, 131:19, 137:1, 140:21, 141:13, 152:14, 165:22, 165:25, 166:9, 168:11, 169:8, 173:2, 173:18, 174:5, 175:8, 176:20, 177:3, 177:11, 178:20, 178:23, 179:11, 179:23, 180:3, 180:11, 180:18, 180:25
draft [4] - 95:24, 96:2, 96:4
dragon [1] - 106:3
drained [2] - 54:12, 54:17
drawings [2] - 120:5, 120:6
drawn [1] - 55:3
dredge [3] - 75:17, 75:23, 75:24
dredging [1] - 13:11
dried [1] - 109:22
drill [5] - 159:12, 159:22, 160:24, 161:2, 161:18
drink [1] - 158:23
drinking [3] - 159:12, 159:15, 159:22
drop [1] - 67:7
drove [1] - 162:16
dry [1] - 64:14
duly [1] - 28:14
dump [5] - 35:7, 139:10, 139:20, 140:6, 140:7
dumping [3] - 54:22, 55:24, 136:13
DUNN [1] - 3:21
during [17] - 62:13, 68:11, 91:18, 93:22, 93:25, 95:6, 98:25, 99:18, 99:21, 112:25, 113:13, 113:23, 117:20, 119:21, 126:15, 127:2, 135:15

E

e-mail [1] - 5:7
early [1] - 116:1
earnest [2] - 5:15, 23:9
EARNEST [1] - 2:7
earthen [2] - 44:3, 119:10
easel [2] - 102:23, 103:1
easier [2] - 37:3, 96:1
easily [1] - 100:19
eastern [1] - 104:13
educational [1] - 29:3
effect [3] - 15:13, 69:21, 172:20
effects [1] - 29:21
efficient [1] - 132:18
efforts [1] - 40:5
egg [7] - 109:23, 110:4, 110:5, 110:9, 110:12
eggshell [1] - 109:4
either [9] - 38:21, 39:5, 54:19, 70:21, 93:18, 112:12, 114:17, 153:3
elevated [5] - 71:6, 162:6, 162:12, 164:25, 165:15
elevation [1] - 105:2
elevations [1] - 103:12
eliminated [1] - 140:8
Elizabeth [1] - 31:22
Elmo [1] - 141:2
elsewhere [1] - 154:23
employed [1] - 182:1
employment [1] - 29:4
emptying [1] - 135:13
end [7] - 32:10, 48:16, 49:5, 49:11, 99:14,

180:3
ended [2] - 22:7, 130:9
endowed [1] - 32:1
engineer [4] - 29:24, 103:8, 107:11, 117:2
engineering [14] - 28:20, 29:15, 29:17, 29:19, 30:4, 31:22, 33:6, 33:24, 34:2, 38:14, 39:21, 111:12, 122:22, 122:23
Engineering [1] - 180:22
engineers [1] - 33:7
enter [1] - 169:17
entered [4] - 177:25, 178:4, 178:16, 180:18
enters [2] - 179:21, 180:2
entire [2] - 85:9, 136:2
entirely [1] - 85:11
entities [1] - 30:18
entitled [6] - 1:18, 15:14, 15:18, 16:12, 16:16, 16:21
entity [1] - 76:8
environment [8] - 29:21, 29:22, 36:2, 36:25, 37:11, 49:14, 110:24, 163:24
environmental [14] - 28:19, 29:17, 29:19, 29:24, 31:22, 33:24, 34:2, 38:14, 39:16, 39:20, 103:8, 107:11, 111:12, 117:2
ENVIRONMENTAL [2] - 1:6, 2:18
environments [1] - 129:6
EPA [6] - 6:4, 6:7, 14:10, 14:19, 143:3, 149:1
episode [1] - 88:8
equipment [3] - 110:1, 179:12, 179:13
erode [2] - 114:14, 140:23
eroded [2] - 108:19, 129:25
eroding [1] - 134:2
erosion [4] - 113:14, 114:4, 126:23, 134:6
escape [1] - 169:16
escaped [2] - 152:23, 153:2
escaping [1] - 150:19
especially [1] - 95:7
essentially [7] - 32:14, 49:24, 51:13, 56:23, 104:12, 106:1, 114:2
establish [5] - 25:23, 91:15, 123:4, 159:20, 165:4
established [6] - 22:3, 59:23, 74:6, 103:13, 105:3, 143:3
establishes [3] - 104:19, 120:25, 123:12
establishing [1] - 123:11
estate [1] - 140:4
et [4] - 17:20, 36:2, 37:1, 109:23
evaluate [1] - 32:10
Evening [1] - 183:13
event [1] - 165:14
eventually [2] - 37:20, 177:25
everywhere [1] - 92:12
evidence [30] - 7:15, 7:20, 7:23, 8:15, 8:20, 8:24, 9:10, 9:18, 10:14, 10:24, 10:25, 11:2, 12:14, 12:17, 12:24, 13:9, 15:2, 22:14, 22:15, 22:17, 58:5, 84:16, 87:8, 87:23, 96:7, 96:19, 102:10, 142:15, 184:7, 184:16
evidentiary [2] - 10:19, 27:23
exactly [7] - 5:9, 47:9, 88:18, 129:22, 147:8, 161:1, 177:17
exam [1] - 167:23
examination [3] - 71:11, 169:1, 171:13
EXAMINATION [2] - 28:15, 166:7
example [8] - 12:14, 30:24, 30:25, 41:13, 44:6, 114:7, 126:22, 159:22
examples [1] - 35:21
excavation [1] - 75:15
excess [4] - 84:8, 85:24, 90:3, 90:10
exchange [2] - 114:18, 153:10
exclude [1] - 9:18
excluded [3] - 7:17, 11:3, 84:21
excluding [1] - 7:21
exclusively [1] - 130:5
excursion [1] - 26:25
excuse [3] - 22:6, 88:10, 139:14
Exhibit [73] - 5:7, 7:19, 18:11, 24:7, 29:1, 43:3, 43:5, 50:23, 51:5, 51:7, 53:1, 55:14, 57:6, 61:18, 61:23, 62:4, 63:25, 65:5, 68:6, 70:18, 71:16, 71:19, 71:22, 71:25, 72:9, 73:22, 73:25, 76:2, 76:12, 79:21, 81:5, 81:7, 83:5, 83:24, 85:4, 89:9, 96:20, 97:6, 102:11, 103:21, 105:13, 105:23, 107:2, 109:8, 109:15, 115:17, 115:21, 120:14, 122:1, 127:5, 131:10, 133:5, 135:10, 136:6, 137:15, 138:3, 138:14, 139:12, 141:6, 141:11, 143:9, 153:23, 165:19, 166:23, 169:4, 169:5, 171:11, 178:12, 180:7, 180:8, 180:9
exhibit [13] - 5:22, 17:21, 25:25, 60:12, 69:19, 70:14, 85:20, 110:18, 133:7, 133:17, 133:23, 162:18, 166:24
exhibits [7] - 18:24, 19:1, 19:6, 78:10, 79:2, 97:3, 184:15
existence [1] - 22:12
existing [1] - 89:14
expect [1] - 131:3
experience [3] - 111:1, 174:9, 174:25
experiments [2] - 38:20, 38:21
expert [19] - 12:9, 21:1, 25:9, 33:8, 58:16, 58:19, 60:14, 93:4, 95:19, 96:9, 96:12, 116:19, 117:9, 137:19, 170:5, 174:11, 176:10, 176:17, 176:25
expertise [2] - 50:18, 123:15
experts [2] - 39:3, 95:8
Expiration [1] - 184:22
explain [6] - 46:14, 82:5, 117:3, 124:18, 151:8, 151:18
explains [2] - 68:19, 162:11
extensive [1] - 5:23
extent [2] - 96:6, 170:13
extra [1] - 176:13
extrapolate [1] - 20:17
extrapolating [1] - 59:7
eye [2] - 9:22, 100:15

F

f) [1] - 172:18
facility [3] - 17:17, 17:19, 18:19
fact [15] - 10:13, 10:15, 12:7, 14:16, 84:10, 92:10, 95:4, 100:4, 127:10, 130:9, 149:3, 162:9, 180:6, 181:22, 182:5
factor [1] - 147:4
faculty [1] - 30:23
fairness [2] - 10:9, 25:24
fall [1] - 107:7
falling [1] - 126:14
false [2] - 13:20, 14:22
familiar [8] - 78:14, 102:11, 115:22, 115:24, 120:16, 122:2, 128:6, 131:14
far [2] - 17:21, 42:3
farmer [1] - 56:18
faster [1] - 31:19
fate [1] - 142:15
fathom [2] - 54:24, 55:25
fault [1] - 160:10
favor [1] - 39:11
Feasibility [1] - 141:16
feature [1] - 114:16
February [1] - 116:1
federal [6] - 13:19, 14:2, 14:8, 14:9, 30:22, 172:23
feet [9] - 46:12, 105:4, 105:6, 158:24, 160:8, 161:12
felt [1] - 94:5
fertilizer [4] - 56:17, 56:19, 56:20, 62:12
few [3] - 30:11, 61:14, 169:7
fiber [1] - 57:2
fibers [5] - 48:5, 48:8, 48:15, 49:18, 69:17
fibrous [4] - 52:20, 67:15, 109:1, 109:22
field [5] - 34:14, 38:13, 38:22, 39:15, 111:12
figure [29] - 46:14, 65:21, 67:8, 115:20, 116:2, 116:9, 116:10, 121:10, 123:1, 125:14, 141:6, 143:8, 144:19, 147:11, 149:16, 149:25, 152:4, 152:11, 157:17, 157:22, 157:24, 158:11, 160:1, 162:19, 162:23, 163:10, 164:18, 165:18, 165:19
figures [2] - 67:20, 67:21
figuring [1] - 45:22
fill [3] - 33:17, 53:18, 181:19
filled [10] - 26:21, 46:21, 46:22, 53:21, 74:21, 98:14, 98:24, 99:1, 139:9, 139:19
filling [2] - 55:6, 55:10
filter [3] - 156:19, 156:20, 156:21
filtration [2] - 66:10, 66:13
final [5] - 9:16, 13:13, 131:18, 135:10
finally [4] - 73:12, 113:17, 135:24, 179:16
findings [1] - 149:1
fine [6] - 15:3, 30:11, 50:20, 61:6, 61:7, 92:6
finish [3] - 84:19, 86:25, 183:6
finished [4] - 23:9, 30:5, 90:21, 135:13
firm [1] - 21:8
FIRST [1] - 2:14
first [68] - 5:5, 6:15, 7:12, 18:10, 22:3, 24:20, 25:10, 25:12, 27:11, 27:14, 27:25,

30:12, 32:7, 38:24, 40:18, 44:14, 52:1, 52:4, 52:25, 53:24, 56:15, 56:23, 59:23, 62:9, 68:5, 71:3, 72:12, 73:1, 75:11, 78:18, 81:21, 82:9, 85:10, 89:8, 89:15, 89:16, 97:5, 98:15, 98:22, 99:9, 103:21, 103:24, 104:23, 105:13, 107:25, 109:8, 109:9, 109:10, 109:14, 110:19, 113:14, 114:2, 115:21, 116:11, 120:20, 122:1, 122:25, 127:12, 133:12, 142:4, 142:12, 142:18, 144:1, 167:2, 167:12, 168:1, 169:11, 169:13
fish [2] - 69:6, 71:9
five [4] - 5:18, 7:1, 106:23, 106:24
five-volume [1] - 5:18
flash [1] - 108:5
floating [2] - 68:16, 101:17
Floor [1] - 184:24
floor [1] - 115:13
FLOOR [2] - 2:12, 4:6
flowing [1] - 100:8
fly [1] - 165:11
focus [4] - 11:8, 12:11, 86:13, 142:2
focused [1] - 160:6
focuses [1] - 10:20
folks [1] - 147:14
follow [3] - 88:6, 88:7, 146:9
follow-up [2] - 88:6, 88:7
following [16] - 1:19, 12:1, 19:1, 27:19, 57:14, 61:10, 64:15, 76:18, 77:20, 90:1, 96:17, 132:25, 137:24, 148:9, 166:6, 173:14
follows [1] - 28:14
footnote [2] - 149:9, 149:15
footprint [1] - 113:23
FOR [5] - 2:3, 2:17, 3:4, 3:14, 4:3
foregoing [1] - 184:6
forever [1] - 102:7
form [8] - 33:17, 114:17, 123:3, 124:17, 153:7, 153:11, 153:12, 164:11
formed [3] - 18:4, 21:11, 21:15
forming [6] - 98:23, 104:4, 104:25, 133:7, 133:18, 171:18
forms [1] - 45:25
formulate [4] - 50:11, 50:12, 74:16, 139:4
formulated [1] - 137:2
formulating [13] - 56:5, 69:19, 72:10, 72:23, 73:6, 73:17, 73:23, 97:15, 98:7, 120:24, 157:22, 162:9, 164:3
forth [2] - 40:14, 52:17
forward [2] - 9:22, 97:3
foundation [22] - 22:20, 22:23, 23:19, 23:21, 23:23, 24:6, 25:14, 25:17, 25:21, 25:22, 27:7, 27:15, 50:18, 58:15, 59:11, 59:23, 60:2, 60:4, 60:5, 60:18, 63:6, 82:8
foundational [1] - 83:22
four [4] - 40:5, 106:23, 106:24, 164:14
fourth [2] - 60:24, 163:21
fraction [2] - 37:24, 155:8
frame [4] - 10:8, 10:9, 104:5, 174:14
freedom [2] - 32:15, 32:19
freely [1] - 78:11
Friday [1] - 183:9
front [2] - 61:18, 121:4
full [6] - 80:13, 91:6, 98:15, 139:9, 158:21, 172:7
fully [1] - 55:2
furthermore [1] - 54:22
future [1] - 121:18

G

gallons [1] - 49:1
gelatin [1] - 66:5
GENERAL [2] - 2:18, 2:21
general [9] - 11:5, 16:20, 41:16, 47:19, 68:14, 72:12, 72:16, 102:2, 177:14
generalizing [1] - 164:10
generally [10] - 40:7, 42:10, 50:6, 53:17, 71:2, 71:4, 71:20, 90:18, 100:16, 144:1
generated [1] - 20:3
gentlemen [7] - 27:23, 57:15, 77:24, 97:2, 132:21, 148:11, 183:8
geoprobes [1] - 127:19
GEORGE [1] - 2:8
GIBBS [2] - 3:5, 3:8
GIBSON [1] - 3:21
gist [1] - 56:22
GIUGLIANO [3] - 3:9, 148:24, 149:17
given [10] - 8:5, 8:9, 23:6, 87:19, 104:14, 119:20, 129:17, 131:23, 174:24
government [5] - 13:19, 14:2, 15:12, 30:23, 76:8
governmental [1] - 172:22
grade [4] - 109:22, 110:3, 110:14, 110:22
gram [3] - 147:16, 147:18, 147:22
graph [14] - 142:6, 142:24, 143:10, 143:22, 144:2, 147:1, 147:5, 151:23, 152:4, 154:25, 155:14, 159:18, 159:19, 164:21
graphs [2] - 162:12, 164:23
GRAY [9] - 4:8, 26:16, 50:17, 58:14, 60:22, 61:3, 62:25, 63:12, 77:16
Gray [1] - 27:4
great [5] - 51:24, 79:1, 106:6, 155:3, 183:12
green [2] - 106:12, 108:17
ground [9] - 35:11, 66:18, 66:23, 125:16, 127:21, 158:24, 158:25, 161:12, 161:21
groundwater [9] - 158:14, 158:19, 158:22, 159:14, 159:15, 159:20, 160:7, 160:17, 163:1
group [1] - 73:10
Guam [1] - 30:19
guess [3] - 8:19, 10:23, 42:4
guidance [2] - 33:14, 151:8
guidelines [1] - 70:1
Gulf [2] - 33:25, 39:22

H

half [3] - 75:3, 134:3, 134:20
Hall's [5] - 86:17, 87:14, 88:4, 88:5, 88:9
hamstring [1] - 8:22
hamstrung [1] - 12:2
hand [6] - 28:5, 71:19, 117:13, 152:6, 176:20, 184:17
handed [1] - 87:20
handle [5] - 15:25, 60:16, 61:5, 94:24, 179:22
handling [4] - 54:25, 120:21, 179:3, 181:9
hang [2] - 146:2
hard [2] - 21:22, 142:1
harder [1] - 110:23
harmful [5] - 7:15, 7:21, 7:23, 8:17, 8:21
HARRIS [4] - 1:4, 1:8, 2:3, 184:1
Harris [37] - 1:20, 5:5, 14:25, 15:13, 16:9, 16:18, 23:6, 24:22, 27:1, 28:2, 79:1, 95:9, 117:5, 170:6, 170:19, 170:21, 170:24, 173:1, 173:6, 173:19, 173:25, 174:21, 176:8, 177:3, 178:6, 178:8, 179:23, 180:16, 181:23, 182:1, 182:6, 182:12, 182:16, 182:17, 182:23, 184:4, 184:23
haul [1] - 84:11
hauled [1] - 57:25
hauling [2] - 54:17, 140:6
hazardous [8] - 7:20, 31:9, 31:17, 33:9, 36:12, 37:4, 111:8, 163:24
HC4024 [1] - 83:25
health [2] - 68:11, 97:19
Health [7] - 71:13, 73:16, 76:21, 97:11, 109:9, 111:14, 167:4
hear [7] - 12:3, 16:6, 82:9, 95:9, 111:11, 117:14, 151:4
heard [6] - 1:18, 15:11, 99:9, 111:8, 144:15, 174:5
hearing [9] - 57:13, 76:18, 77:20, 89:25, 132:24, 137:24, 148:9, 166:5, 173:13
hearsay [1] - 23:1
heating [1] - 144:13
heavy [1] - 124:25
held [4] - 1:19, 20:6, 135:17, 158:20
help [4] - 14:10, 33:9, 40:20, 178:10
helped [2] - 35:15, 139:4
helpful [3] - 10:7, 12:9, 121:23
helping [2] - 175:9, 177:4
Henderson [2] - 74:7, 168:4
hereby [2] - 172:22, 184:5
hereunder [1] - 172:6
hexachlorobenzene [4] - 36:15, 36:19, 38:7, 38:10
high [7] - 37:18, 68:24, 70:5, 71:6, 71:7, 162:13
higher [5] - 149:12, 154:16, 154:19, 154:23, 157:6
highlight [4] - 97:17, 119:11, 167:1, 167:21
highlighting [1] - 80:16
Highway [3] - 80:21, 85:7, 85:9
himself [1] - 58:19
HINTON [37] - 4:8, 13:24, 14:11, 14:14,

15:3, 17:7, 17:11, 17:15, 18:6, 18:12, 18:17, 19:7, 19:20, 21:10, 21:21, 22:1, 22:15, 22:25, 25:2, 78:24, 79:9, 79:13, 80:7, 81:25, 82:3, 82:5, 84:16, 85:14, 86:7, 86:12, 87:1, 87:3, 88:18, 90:6, 90:16, 96:5, 96:15
Hinton [5] - 82:10, 85:19, 86:6, 90:2, 90:9
hired [3] - 32:7, 182:5, 182:6
historic [4] - 128:25, 129:5, 129:9, 129:11
historical [10] - 40:12, 40:17, 41:2, 41:6, 108:23, 112:21, 120:2, 120:7, 128:22, 169:1
history [3] - 6:6, 29:4, 122:21
hit [1] - 126:21
hold [5] - 49:24, 100:21, 100:25, 101:16, 121:13
holding [1] - 67:7
home [1] - 183:9
Honor [69] - 7:12, 10:22, 13:12, 13:24, 14:11, 15:3, 15:6, 16:10, 17:7, 17:11, 18:23, 19:1, 19:7, 19:10, 20:4, 21:10, 21:25, 23:1, 23:2, 24:10, 25:2, 26:16, 28:11, 50:17, 57:10, 58:14, 59:11, 60:23, 62:25, 68:7, 76:15, 77:16, 78:24, 79:14, 80:8, 80:15, 80:22, 84:8, 84:17, 85:15, 87:4, 88:11, 88:18, 90:7, 90:16, 90:25, 91:11, 96:15, 96:22, 102:18, 102:24, 103:15, 122:5, 123:14, 131:11, 132:17, 133:4, 136:21, 137:5, 137:11, 137:18, 138:9, 141:3, 148:24, 152:20, 157:19, 170:12, 173:5, 183:5
Honorable [1] - 1:19
hope [2] - 10:25, 12:16
hopefully [1] - 16:3
horizon [1] - 40:1
horizontal [3] - 145:3, 145:4, 155:17
hour [1] - 41:24
hours [3] - 42:1, 42:3, 49:7
hours.. [1] - 132:2
HOUSTON [5] - 2:6, 2:12, 3:6, 3:16, 4:6
Houston [7] - 1:20, 41:12, 75:19, 141:24, 145:13, 154:7, 184:24
howell [1] - 31:23
humans [2] - 29:20, 29:22
hundred [5] - 40:4, 101:20, 147:4, 154:23, 157:6
hundreds [2] - 101:13, 158:24
hurricane [1] - 30:24
hydrogens [1] - 36:9
hydrologist [1] - 117:1
hydrophobic [7] - 36:6, 144:10, 144:12, 144:13, 144:16, 144:18, 155:11
hypothetical [1] - 54:6

I

I-10 [7] - 26:20, 43:9, 103:24, 142:10, 145:19, 156:5, 163:1
idea [4] - 46:15, 120:8, 165:10, 177:14
ideal [2] - 181:1, 181:15
identify [3] - 51:17, 173:21, 173:22
image [1] - 116:11
images [2] - 107:12, 108:4
immediately [3] - 126:13, 154:15, 154:22
impacts [1] - 30:25
impart [1] - 100:16
important [20] - 11:7, 73:14, 98:22, 107:21, 112:10, 114:15, 121:11, 121:19, 122:15, 122:19, 123:5, 134:15, 143:7, 143:21, 147:2, 160:18, 165:4, 165:10, 165:23, 167:11
impossible [2] - 101:14, 169:16
impoundment [66] - 12:16, 17:17, 17:22, 18:2, 18:9, 18:22, 19:9, 19:14, 19:21, 20:2, 20:8, 20:16, 20:17, 20:25, 21:12, 21:19, 23:17, 23:25, 24:1, 24:3, 24:5, 26:8, 27:2, 43:20, 56:6, 63:3, 70:10, 75:22, 78:23, 79:5, 79:10, 79:16, 79:18, 79:19, 79:24, 79:25, 80:2, 80:17, 80:18, 80:25, 81:14, 81:23, 82:1, 82:3, 82:12, 82:13, 83:7, 84:10, 85:12, 86:15, 86:18, 86:21, 87:5, 87:7, 87:11, 88:19, 88:25, 90:5, 90:13, 92:1, 93:8, 99:24, 113:15, 149:2, 150:1, 161:6
impoundments [107] - 19:18, 20:11, 26:11, 42:13, 42:17, 43:8, 43:12, 45:11, 45:18, 46:1, 46:4, 47:8, 50:5, 55:7, 55:11, 62:7, 62:8, 65:11, 65:17, 65:20, 68:1, 69:10, 70:8, 71:9, 72:4, 74:5, 74:13, 74:18, 75:2, 75:12, 75:21, 75:25, 76:9, 76:11, 78:17, 78:22, 80:12, 81:17, 82:17, 83:2, 83:5, 83:10, 83:12, 84:2, 84:3, 84:15, 85:6, 86:3, 87:25, 88:13, 88:15, 88:17, 88:24, 89:15, 92:18, 93:12, 93:14, 99:14, 99:20, 99:22, 105:12, 110:21, 111:6, 112:22, 113:9, 114:7, 114:21, 119:11, 124:14, 125:23, 128:17, 128:25, 129:5, 129:18, 130:2, 130:4, 132:7, 135:4, 135:6, 135:20, 143:18, 149:13, 152:23, 154:1, 154:10, 154:11, 154:22, 155:19, 155:23, 156:1, 156:7, 156:14, 157:7, 158:8, 158:14, 169:18, 169:22, 169:25, 171:8, 173:3, 173:25, 174:14, 174:18, 175:10, 177:12, 177:17, 181:16
impractical [1] - 136:13
imprecise [1] - 8:8
impression [3] - 9:21, 13:21, 14:22
IN [1] - 1:4
in-between [1] - 10:14
INC [4] - 1:10, 1:11, 3:4, 3:4
included [4] - 84:9, 100:5, 126:20, 184:9
including [4] - 15:12, 48:21, 49:12, 49:18
incomplete [1] - 129:14
inconsistent [2] - 113:3, 129:1
incorporated [1] - 17:23
incorrect [1] - 15:22
independent [4] - 172:5, 172:7, 172:15, 178:5
independently [1] - 98:25
indicate [2] - 139:15, 179:17
indicated [4] - 17:8, 109:20, 140:13, 178:23
indicating [7] - 43:18, 44:15, 157:6, 158:9, 160:7, 160:22, 164:4
indicating) [38] - 30:15, 44:1, 45:3, 45:7, 51:25, 64:22, 64:24, 65:2, 70:16, 74:3, 103:23, 104:2, 104:11, 106:10, 108:2, 112:6, 112:8, 116:13, 117:14, 118:5, 118:10, 119:15, 119:17, 127:9, 127:13, 139:17, 142:20, 145:2, 145:14, 146:8, 146:12, 146:16, 146:18, 146:23, 149:8, 155:20, 160:14, 160:19
indication [2] - 42:16, 160:5
indispensable [1] - 1:6
Industrial [1] - 72:20
INDUSTRIAL [2] - 1:9, 4:4
industrial [8] - 34:12, 36:22, 36:23, 47:12, 69:12, 69:13, 69:16
industry [1] - 35:7
inert [1] - 56:24
information [57] - 20:7, 40:25, 41:6, 42:15, 42:24, 45:24, 46:2, 50:11, 50:16, 51:22, 56:5, 56:7, 64:4, 64:16, 72:3, 72:6, 72:9, 72:13, 74:24, 76:22, 83:11, 97:14, 98:7, 98:13, 98:22, 103:10, 104:24, 104:25, 108:22, 119:7, 119:17, 120:7, 120:23, 121:9, 128:15, 129:17, 132:1, 133:19, 133:23, 133:25, 135:19, 137:1, 138:13, 138:20, 139:3, 139:6, 139:22, 140:11, 142:14, 142:25, 143:8, 148:16, 160:3, 165:17, 165:19, 165:21
inside [8] - 44:19, 71:9, 118:4, 118:6, 158:21, 161:14, 161:22, 161:24
inspected [1] - 179:12
instability [1] - 150:6
instead [4] - 37:6, 37:7, 38:2, 38:11
institute [2] - 30:13, 30:17
instruction [8] - 93:2, 93:18, 94:8, 95:17, 95:24, 96:2, 96:4, 96:14
instrument [2] - 79:15, 80:11
integrity [1] - 111:4
intend [1] - 123:7
intending [1] - 58:19
intends [1] - 87:16

intention [2] - 26:6, 26:9
interchangeably [1] - 44:10
interest [3] - 31:16, 32:17, 40:23
interesting [2] - 32:20, 112:20
interests [1] - 123:9
interject [1] - 5:15
interlinked [1] - 66:6
internal [3] - 44:18, 55:23, 56:2
International [4] - 166:10, 166:12, 171:3, 173:22
INTERNATIONAL [2] - 1:9, 3:14
interpreting [1] - 107:8
interrupted [1] - 117:15
Interstate [1] - 18:20
introducing [1] - 158:17
introduction [1] - 5:22
inverted [2] - 43:20, 44:22
investigated [1] - 55:2
investigation [18] - 6:2, 6:5, 68:11, 71:13, 71:21, 72:17, 73:16, 88:8, 91:1, 91:2, 91:5, 91:10, 97:12, 97:19, 98:1, 127:2, 128:25, 160:1
Investigation [1] - 141:15
investigations [1] - 119:21
invited [2] - 5:10, 35:7
involve [1] - 35:1
involved [14] - 22:19, 34:5, 35:14, 35:25, 40:1, 40:16, 41:11, 54:5, 173:24, 174:2, 174:3, 175:5, 175:9, 177:4
involvement [3] - 166:13, 180:3, 182:15
involving [1] - 129:5
IP [3] - 13:18, 68:6, 70:18
irrelevant [2] - 18:8, 129:13
Islands [1] - 30:19
issue [39] - 5:5, 7:4, 7:8, 9:18, 9:25, 10:4, 10:17, 11:21, 11:22, 12:18, 12:22, 16:3, 17:17, 18:3, 21:12, 22:18, 23:4, 23:12, 27:5, 27:13, 32:19, 38:12, 57:17, 61:5, 79:11, 81:1, 86:8, 86:19, 87:7, 91:19, 93:4, 93:11, 94:5, 94:20, 95:14, 95:21, 96:12, 99:10, 112:20
issues [10] - 7:9, 11:1, 13:7, 30:21, 86:16, 98:24, 100:3, 117:4, 117:5, 117:7
items [1] - 79:2
itself [7] - 38:2, 62:8, 62:9, 75:22, 112:15, 149:2, 174:1

J

Jacinto [32] - 6:5, 21:3, 26:20, 43:9, 85:3, 85:13, 85:15, 86:4, 99:20, 100:20, 102:16, 105:14, 114:23, 114:24, 115:7, 115:11, 115:12, 115:14, 117:23, 117:25, 118:18, 129:21, 131:4, 136:14, 140:5, 141:22, 145:13, 159:10, 160:19, 169:17, 170:2, 179:11
January [1] - 135:16
Jell [3] - 66:4, 66:5
Jell-O [3] - 66:4, 66:5
Jen [1] - 24:11
Jersey [1] - 34:9
jet [2] - 75:13, 125:8
jetted [1] - 124:11
jetting [1] - 124:14
job [1] - 95:11
John [3] - 25:5, 28:3, 33:1
JOHN [2] - 2:9, 28:13
Johns [1] - 148:19
journal [1] - 38:23
journals [2] - 39:9, 39:13
JPMORGAN [1] - 2:5
judge [2] - 25:19, 95:11
Judge [1] - 1:19
JUDICIAL [1] - 1:11
July [2] - 88:10, 105:11
jump [7] - 95:4, 95:5, 150:21, 150:24, 151:5, 151:14, 152:3
June [3] - 73:1, 105:10, 128:8
JURY [1] - 177:23
Jury [6] - 57:18, 63:19, 78:3, 96:25, 148:14, 152:17
jury [45] - 5:11, 7:15, 7:19, 7:22, 8:19, 8:23, 9:21, 24:19, 25:22, 26:25, 27:7, 27:10, 27:16, 27:17, 27:18, 57:13, 60:21, 61:15, 62:24, 76:18, 77:20, 78:9, 78:12, 81:18, 81:19, 82:16, 84:1, 89:25, 96:24, 132:24, 137:24, 141:10, 148:9, 150:11, 166:5, 166:20, 167:3, 167:10, 167:14, 169:6, 169:22, 173:13, 174:5, 175:14
jury) [1] - 61:11

K

KAIM [1] - 3:9
Katrina [1] - 30:24
keep [10] - 37:20, 43:21, 90:24, 111:19, 112:17, 152:16, 160:25, 166:20, 172:20, 180:8
keeping [1] - 111:4
kept [4] - 8:21, 8:22, 10:1, 45:19
key [5] - 72:24, 104:5, 112:15, 142:1, 160:3
Kidd [3] - 184:3, 184:21, 184:21
kids [2] - 29:11, 29:12
kill [1] - 69:6
Kimberly [3] - 184:3, 184:21, 184:21
kind [45] - 13:6, 29:4, 33:14, 34:10, 34:11, 36:3, 39:7, 39:13, 41:16, 43:19, 43:20, 44:4, 44:21, 47:16, 49:16, 51:18, 52:15, 52:20, 53:25, 67:13, 67:15, 68:13, 74:4, 75:6, 75:23, 103:10, 106:2, 107:7, 109:4, 109:5, 113:13, 116:16, 117:4, 117:5, 123:12, 127:11, 127:22, 130:5, 131:6, 142:1, 155:5, 156:7, 158:9, 158:11, 163:17
kinds [4] - 83:20, 128:4, 163:23, 163:25
knowledge [4] - 22:25, 50:8, 53:6, 91:15
known [2] - 10:2, 68:19
kraft [3] - 47:17, 47:18, 47:19

L

lab [10] - 33:12, 35:18, 36:11, 36:14, 38:11, 38:20, 38:22, 64:14, 64:23, 71:5
ladies [7] - 27:22, 57:15, 77:24, 97:2, 132:20, 148:11, 183:8
lady [1] - 32:2
laid [3] - 25:21, 58:15, 83:2
Lake [2] - 141:23, 154:6
lake [1] - 159:6
land [12] - 35:5, 35:6, 54:17, 55:1, 56:18, 103:13, 106:19, 107:18, 126:7, 138:18, 140:8, 159:8
landowner [1] - 80:2
large [3] - 34:14, 49:23, 153:17
larger [2] - 50:3, 147:5
largest [1] - 34:16
laser [6] - 30:10, 30:14, 97:22, 139:15, 142:8, 160:13
last [23] - 9:16, 40:5, 66:16, 76:25, 77:1, 77:2, 77:4, 77:6, 80:22, 82:25, 84:23, 87:18, 98:4, 109:24, 110:18, 123:6, 123:16, 123:17, 130:8, 138:21, 149:3, 163:2, 172:18
late [1] - 108:20
law [2] - 14:8, 14:9
laws [1] - 172:23
lawsuit [3] - 17:17, 23:4, 81:1
lawyers [3] - 182:7, 182:13, 182:14
lay [10] - 22:20, 22:22, 23:18, 23:22, 24:5, 25:14, 25:16, 25:23, 27:6, 82:8
layer [9] - 111:4, 149:2, 149:5, 149:18, 161:13, 161:15, 162:14, 165:8, 165:9
layers [2] - 66:23, 128:4
laying [1] - 27:15
lead [1] - 151:6
leading [1] - 151:1
leaked [2] - 35:8, 36:24
learn [2] - 175:18, 182:22
learned [1] - 182:13
least [2] - 112:16, 128:2
leave [7] - 32:12, 40:22, 50:2, 99:13, 100:1, 102:7, 181:11
leaving [4] - 52:10, 85:5, 104:7, 160:5
leeway [2] - 150:21, 151:1
left [21] - 40:20, 43:22, 45:23, 48:20, 49:19, 57:19, 79:3, 80:9, 94:5, 99:7, 106:17, 106:21, 107:6, 108:17, 114:10, 125:16, 140:22, 145:11, 151:24, 158:7, 163:16
legal [6] - 115:1, 115:4, 118:22, 118:23, 170:13, 170:14
legend [1] - 157:15
length [1] - 127:13
letter [14] - 5:11, 5:13, 6:19, 18:3, 18:11, 18:19, 18:21, 51:12, 65:6, 133:13, 169:6, 180:10, 180:21, 181:19
letters [4] - 128:7, 128:8, 128:16, 160:16
letting [1] - 7:18
levee [10] - 43:25, 44:8, 99:22, 108:1, 127:11, 133:19, 134:3, 134:7,

134:20, 135:8
levees [21] - 35:6, 44:12, 98:15, 98:17, 98:19, 107:7, 113:4, 119:6, 119:8, 119:10, 119:21, 125:23, 126:12, 126:14, 126:18, 132:10, 132:14, 133:24, 133:25, 134:19, 140:22
level [8] - 69:24, 104:15, 104:18, 105:2, 105:4, 106:15, 106:25, 162:12
levels [2] - 149:20, 161:6
LEWIS [1] - 3:15
licenses [1] - 172:20
life [1] - 37:17
light [4] - 81:3, 81:8, 101:1, 108:5
limestone [1] - 56:24
limine [1] - 7:11
limit [1] - 37:22
line [14] - 25:6, 27:17, 30:12, 31:7, 31:20, 64:24, 65:2, 66:16, 91:18, 143:1, 143:2, 146:9, 154:10, 157:13
lined [2] - 63:18, 146:5
lines [9] - 12:24, 30:11, 63:2, 104:14, 142:2, 142:18, 142:19, 143:5, 176:18
link [2] - 24:3, 26:7
liquid [1] - 181:10
liquor [7] - 7:14, 24:14, 47:23, 60:24, 84:20, 88:8
list [2] - 5:22, 29:3
listed [1] - 164:1
lists [1] - 54:7
liter [4] - 147:11, 147:12, 148:3, 164:21
literature [1] - 41:16
live [3] - 29:7, 29:8, 29:13
living [1] - 28:18
LLP [5] - 2:4, 3:5, 3:15, 3:21, 4:5
load [1] - 52:14
loaded [1] - 123:20
loading [3] - 26:21, 73:10, 135:20
local [1] - 172:24
located [8] - 76:13, 115:6, 132:7, 142:11, 143:12, 169:25, 171:1, 177:18
location [10] - 116:14, 120:22, 122:25, 127:11, 136:14, 158:4, 160:21, 161:16, 180:25, 181:15
locations [2] - 35:15, 151:25
log [2] - 128:1, 128:2
look [44] - 6:16, 7:1, 7:3, 9:9, 14:18, 39:11, 40:12, 40:24, 50:23, 64:3, 64:11, 65:1, 66:16, 72:16, 84:23, 85:11, 85:20, 90:6, 91:6, 98:3, 107:10, 113:11, 113:18, 116:9, 120:11, 121:2, 123:19, 127:24, 131:11, 135:9, 136:5, 143:20, 150:18, 157:17, 157:21, 162:19, 163:3, 163:7, 167:17, 168:14, 172:1, 180:6, 180:7
looked [18] - 9:1, 35:25, 46:2, 60:1, 67:25, 71:20, 100:13, 108:6, 108:10, 116:18, 124:25, 129:5, 130:7, 133:6, 136:7, 138:5, 141:7, 180:7
looking [41] - 11:20, 13:14, 13:25, 63:23, 65:6, 65:21, 66:17, 67:12, 68:9, 74:1, 74:2, 89:8, 90:9, 100:25, 103:20, 105:24, 106:7, 107:2, 110:24, 112:5, 116:5, 128:7, 134:5, 138:19, 138:21, 139:12, 141:6, 141:10, 141:21, 141:22, 142:5, 142:12, 144:1, 145:24, 155:1, 158:5, 158:6, 158:7, 161:5, 163:17, 165:18
looks [4] - 106:2, 106:21, 106:24, 118:2
LOUISIANA [3] - 3:6, 3:15, 4:6
Louisiana [9] - 28:20, 29:8, 30:12, 30:16, 31:1, 31:20, 34:1, 35:2, 39:22
low [5] - 35:6, 37:23, 153:8, 154:8, 165:9
lower [3] - 70:21, 157:3, 164:24
lowered) [1] - 19:11
LSU [9] - 30:4, 30:7, 32:3, 32:21, 32:23, 33:4, 33:22, 34:18, 42:7
lump [1] - 155:5
lunch [1] - 78:2

M

ma'am [2] - 79:12, 87:2
machine [1] - 1:21
machines [1] - 127:19
magazine [1] - 38:23
magnitude [7] - 149:12, 150:4, 154:16, 154:19, 154:21, 157:5
mail [1] - 5:7
maintained [5] - 112:16, 112:17, 129:24, 130:11, 140:18
maintaining [2] - 173:3, 173:21
maintenance [3] - 112:25, 113:2, 140:14
Maintenance [1] - 72:20
MAINTENANCE [2] - 1:10, 4:4
majority [1] - 85:1
man [1] - 35:5
MANAGEMENT [4] - 1:10, 1:11, 3:4, 3:4
Management [5] - 5:10, 7:14, 8:2, 9:3, 10:2
manner [1] - 181:10
map [8] - 141:22, 145:9, 145:10, 153:23, 153:25, 155:24, 156:1, 156:9
March [10] - 25:8, 105:19, 118:12, 118:20, 122:13, 123:3, 153:19, 177:10, 178:15, 178:18
marine [1] - 30:3
MARK [1] - 3:9
marked [2] - 155:25, 158:8
marker [15] - 142:22, 143:12, 145:12, 145:16, 145:17, 145:18, 145:19, 145:21, 145:22, 146:6, 146:15, 146:17, 156:1, 156:6, 156:7
markers [3] - 142:3, 143:6, 156:8
marks [1] - 105:5
married [1] - 29:9
marsh [1] - 39:21
marshall [1] - 5:8
marshes [2] - 39:25, 40:2
Maryland [1] - 35:12
mass [2] - 37:15, 106:19
Massachusetts [1] - 35:17
master's [2] - 30:3, 35:22
material [78] - 41:7, 45:20, 46:1, 49:21, 51:14, 52:7, 52:20, 53:20, 53:23, 56:8, 56:11, 56:12, 56:23, 56:24, 57:3, 57:25, 59:2, 67:15, 68:15, 69:3, 73:12, 74:4, 74:9, 74:12, 74:17, 74:22, 75:14, 86:23, 108:20, 108:21, 109:1, 109:5, 109:18, 109:19, 109:21, 109:22, 112:19, 113:14, 113:25, 114:1, 121:1, 121:3, 121:16, 122:17, 124:11, 125:1, 125:7, 125:10, 125:25, 126:1, 126:8, 126:18, 126:20, 127:24, 129:25, 130:18, 130:19, 130:20, 130:23, 130:24, 130:25, 131:6, 133:15, 136:4, 138:14, 139:20, 139:24, 140:11, 153:16, 159:2, 159:3, 165:8, 165:9, 167:18, 168:3, 168:7, 168:16, 168:17
materials [10] - 49:12, 68:20, 86:14, 90:21, 120:1, 127:22, 128:5, 139:9, 159:7, 179:10
matter [12] - 5:14, 55:9, 57:1, 62:12, 72:23, 89:7, 104:4, 107:22, 116:3, 120:13, 136:8, 157:25
matters [2] - 27:23, 132:19
matting [1] - 110:1
McGinnis [12] - 1:9, 25:12, 25:14, 72:19, 73:3, 76:7, 76:23, 79:25, 84:11, 87:9, 98:18, 109:25
MCGINNIS [1] - 4:4
mean [16] - 31:25, 37:13, 47:18, 59:4, 65:25, 88:11, 88:14, 104:15, 104:18, 105:2, 106:15, 106:25, 126:1, 130:24, 139:14, 154:19
meaning [2] - 45:15, 136:22
means [14] - 8:4, 32:1, 32:5, 37:14, 37:24, 57:6, 93:3, 124:12, 125:20, 130:25, 144:13, 154:20, 164:14, 172:8
meant [2] - 93:22, 137:8
measurable [1] - 149:4
measure [11] - 70:3, 144:21, 147:12, 147:13, 155:5, 155:12, 156:18, 156:22, 158:14, 162:15, 165:15
measured [4] - 69:22, 149:22, 155:7, 158:15
measurement [3] - 155:7, 158:1, 160:6
measurements [3] - 51:16, 149:7, 150:2
measures [2] - 68:22, 155:2
measuring [2] -

147:10, 147:24
mechanism [2] - 165:11, 165:13
mechanisms [9] - 40:21, 99:7, 99:18, 99:25, 152:25, 153:17, 153:21, 157:9, 165:24
meet [2] - 79:22, 166:11
meetings [1] - 182:18
MELANIE [1] - 4:8
members [1] - 138:16
memo [2] - 53:17, 125:14
memorandum [2] - 120:12, 133:9
memory [2] - 5:9, 135:3
memos [1] - 41:4
Memphis [1] - 30:3
mention [2] - 9:19, 9:20
mentioned [1] - 100:3
messed [1] - 64:19
met [2] - 29:19, 32:11
metal [1] - 127:18
metals [2] - 163:18, 163:19
method [7] - 34:19, 89:13, 179:2, 179:9, 179:17, 179:18
methods [6] - 31:18, 31:19, 51:14, 54:3, 54:7, 172:8
microns [1] - 101:14
mid [1] - 29:25
middle [4] - 43:19, 45:5, 119:12, 160:22
might [9] - 54:2, 67:3, 119:4, 124:10, 125:3, 130:8, 131:19, 132:17, 134:22
mile [21] - 142:3, 142:22, 143:6, 143:12, 144:24, 145:8, 145:12, 145:16, 145:17, 145:18, 145:19, 145:21, 145:22, 146:6, 146:15, 146:17, 155:18, 156:1, 156:6, 156:7, 156:8
mile-marker [14] - 142:22, 145:12, 145:16, 145:17, 145:18, 145:19, 145:21, 145:22, 146:6, 146:15, 146:17, 156:1, 156:6, 156:7
mile-markers [2] - 143:6, 156:8
miles [5] - 54:18, 54:23, 55:25, 142:22, 150:19
mill [11] - 8:18, 19:17, 47:17, 47:18, 49:9, 50:13, 54:25, 69:15, 108:24, 164:6, 171:7
million [1] - 49:1
mills [2] - 48:25, 70:4
MIMC [19] - 10:3, 13:14, 13:18, 17:19, 17:23, 18:3, 19:21, 21:6, 21:9, 21:10, 21:14, 21:15, 22:6, 22:12, 22:19, 23:17, 26:18, 83:25, 89:9
MIMC's [1] - 21:17
mind [4] - 46:20, 59:4, 134:11, 168:1
minus [1] - 125:20
minute [8] - 17:16, 61:13, 97:18, 104:21, 144:25, 146:22, 148:12
minutes [5] - 96:3, 138:3, 138:8, 139:23, 140:19
mirror [1] - 147:7
misleading [1] - 87:14
missed [1] - 6:15
missing [1] - 5:16
misspoke [1] - 163:2
mistaken [1] - 143:4
mistakenly [1] - 85:5
misuse [3] - 81:3, 81:6, 81:8
mix [5] - 52:15, 56:18, 75:5, 75:8, 75:14
mixed [4] - 46:25, 74:22, 74:23, 75:4
mixing [2] - 75:16
mixture [7] - 47:24, 52:21, 124:21, 124:24, 127:25, 128:3, 131:1
mobilize [1] - 153:5
modifications [1] - 47:20
moisture [14] - 52:6, 52:19, 62:10, 62:16, 63:11, 63:15, 64:2, 64:17, 65:4, 66:1, 66:20, 66:24, 67:13, 125:19
molecule [1] - 164:15
moment [4] - 19:23, 82:6, 84:18, 179:18
money [3] - 30:22, 31:4, 32:2
monitoring [1] - 160:20
month [2] - 122:13, 178:15
monthly [1] - 122:10
months [3] - 132:11, 132:15, 134:1
MORGAN [1] - 3:15
morning [4] - 7:6, 27:20, 39:18, 183:11
most [9] - 43:17, 44:15, 89:12, 104:13, 104:16, 105:15, 114:4, 128:5, 179:19
mostly [4] - 52:19, 66:2, 75:6, 109:2
motion [1] - 7:10
mouth [1] - 179:10
move [21] - 45:20, 47:2, 58:12, 64:20, 67:22, 76:3, 82:24, 83:18, 97:3, 111:22, 113:17, 122:25, 123:15, 124:20, 125:5, 129:16, 135:25, 153:5, 153:15, 172:17, 181:18
moved [10] - 37:1, 45:21, 49:25, 72:14, 73:8, 99:2, 99:6, 112:13, 151:24, 153:3
movement [2] - 117:9
moving [9] - 5:21, 60:15, 65:17, 65:19, 83:4, 86:14, 112:11, 120:21, 154:6
MR [255] - 2:7, 2:8, 2:9, 2:14, 2:21, 3:8, 3:8, 3:9, 3:9, 3:10, 3:11, 3:17, 3:18, 3:18, 3:19, 3:23, 5:5, 5:15, 5:20, 6:1, 6:14, 6:22, 6:25, 7:4, 7:8, 7:25, 8:10, 8:25, 9:7, 10:22, 11:9, 11:14, 12:13, 12:19, 12:20, 13:2, 13:5, 13:12, 13:13, 15:6, 15:11, 15:22, 16:10, 16:17, 17:1, 17:5, 17:10, 17:13, 17:14, 18:5, 18:10, 18:14, 18:23, 19:10, 19:16, 20:4, 20:19, 20:21, 21:5, 21:22, 21:24, 22:2, 22:5, 22:6, 22:10, 22:13, 22:16, 22:20, 22:24, 23:2, 23:8, 23:9, 23:18, 24:7, 24:9, 24:17, 24:22, 24:25, 25:4, 25:7, 25:8, 25:13, 25:19, 25:24, 26:9, 27:9, 28:2, 28:10, 28:16, 29:1, 43:3, 50:7, 50:24, 51:2, 51:3, 53:5, 55:16, 55:18, 55:21, 57:8, 58:3, 58:7, 58:11, 58:21, 59:10, 59:19, 60:4, 60:8, 60:14, 61:1, 61:4, 61:8, 62:22, 63:15, 63:22, 63:24, 64:5, 64:10, 68:5, 76:15, 77:3, 77:6, 77:22, 78:13, 78:21, 81:15, 81:21, 82:2, 82:4, 82:7, 82:15, 82:21, 82:25, 83:9, 84:5, 84:7, 84:20, 85:20, 85:23, 86:1, 86:24, 88:1, 88:5, 88:14, 88:16, 89:1, 89:3, 89:6, 89:11, 89:20, 90:25, 91:4, 91:8, 91:11, 91:13, 91:20, 92:14, 92:22, 92:24, 93:15, 93:20, 94:15, 94:19, 95:2, 96:1, 96:22, 97:5, 97:8, 102:18, 102:23, 103:2, 103:15, 104:22, 105:22, 108:13, 109:7, 110:17, 111:22, 113:6, 113:11, 113:17, 115:1, 115:16, 115:20, 116:8, 118:21, 118:25, 120:14, 121:5, 121:25, 122:5, 123:14, 127:5, 129:2, 129:13, 129:16, 131:9, 131:17, 132:17, 133:4, 134:11, 135:9, 136:5, 136:21, 136:24, 137:11, 137:18, 138:9, 138:11, 138:25, 141:3, 141:5, 141:12, 143:15, 143:24, 146:4, 148:5, 148:17, 148:23, 148:24, 149:9, 149:17, 150:3, 150:8, 150:9, 150:12, 150:17, 150:23, 151:7, 151:21, 152:6, 152:9, 152:13, 152:20, 156:3, 156:10, 157:19, 160:11, 160:15, 163:6, 165:25, 166:8, 167:1, 167:8, 169:4, 169:10, 170:12, 171:10, 172:17, 173:5, 173:17, 176:20, 177:21, 178:13, 183:5
MS [53] - 2:8, 3:10, 4:8, 4:8, 6:8, 7:12, 8:14, 9:16, 13:24, 14:11, 14:14, 15:3, 17:7, 17:11, 17:15, 18:6, 18:12, 18:17, 19:7, 19:20, 21:10, 21:21, 22:1, 22:15, 22:25, 25:2, 26:16, 50:17, 58:14, 60:22, 61:3, 62:25, 63:12, 77:16, 78:24, 79:9, 79:13, 80:7, 81:25, 82:3, 82:5, 84:16, 85:14, 86:7, 86:12, 87:1, 87:3, 88:18, 90:6, 90:16, 96:5, 96:15, 137:5
mud [9] - 67:2, 67:3, 67:14, 67:15, 67:16, 67:19, 126:2, 168:11, 168:13
Muir [6] - 20:12, 80:14, 84:6, 84:18, 85:18, 86:11
MUIR [19] - 2:9, 17:13, 18:23, 20:4, 61:1, 81:21, 82:2, 82:4, 84:7, 84:20, 85:20, 85:23, 86:1, 86:24, 88:14, 90:25, 91:4, 91:8, 150:3
multiple [3] - 45:24, 126:11, 149:21
municipal [1] - 68:25
must [2] - 55:2, 58:8
mustard [1] - 158:9

N

N.W [1] - 3:21
name [1] - 161:3
named [3] - 16:20, 32:1, 164:9
names [1] - 160:25
nanogram [2] - 147:17, 147:20
natural [2] - 100:13, 183:7
nature [1] - 136:1
near [5] - 41:13, 86:4, 93:14, 160:20, 170:1
nearly [2] - 80:13, 98:15
necessary [3] - 1:6, 16:2, 16:8
ned [1] - 131:24
need [34] - 5:19, 10:22, 12:11, 14:18, 18:17, 18:18, 25:17, 28:8, 50:22, 60:17, 65:15, 76:7, 78:11, 80:24, 88:22, 92:1, 92:17, 93:3, 117:21, 122:3, 123:2, 132:8, 134:1, 136:2, 138:12, 141:1, 142:6, 143:20, 143:24, 148:5, 148:11, 158:18, 162:19, 163:7
needed [8] - 10:18, 20:10, 68:22, 75:5, 76:23, 77:9, 91:15, 91:21
needs [5] - 16:25, 24:14, 59:23, 65:15, 98:17
NELSON [1] - 3:23
neutral [1] - 109:21
never [5] - 69:21, 91:21, 102:8, 130:10, 183:2
New [2] - 34:9, 34:10
new [8] - 31:18, 34:15, 34:19, 85:3, 86:1, 86:2, 158:18
Newark [1] - 34:9
news [1] - 166:19
next [21] - 31:7, 31:20, 52:16, 52:17, 54:15, 54:21, 65:8, 79:21, 80:11, 80:15, 107:1, 108:14, 113:6, 132:2, 138:21, 145:15, 145:18, 145:21, 163:21, 168:14, 181:4
next-to-the-bottom [1] - 80:11
next-to-the-last-page [1] - 138:21
nice [1] - 166:11
nine [1] - 10:16
nitrogen [1] - 56:17
NO [1] - 1:2
nominal [2] - 15:21, 140:10
non [2] - 109:21, 111:15
non-toxic [2] - 109:21, 111:15
nonissue [1] - 94:9
normally [1] - 33:16
north [3] - 26:20, 43:9, 163:1
northern [29] - 17:22, 18:2, 20:8, 20:17, 23:17, 23:24, 24:5, 25:11, 26:7, 27:2, 79:24, 81:17, 82:17, 84:2, 86:3, 86:15, 86:18, 86:21, 87:10, 87:25, 88:14, 88:16, 88:24, 89:15, 90:5, 90:13, 93:7, 113:15, 149:13
note [3] - 70:2, 80:5, 154:8
notes [4] - 11:20, 51:3, 94:18, 178:19
nothing [9] - 6:19, 16:14, 17:12, 17:16, 17:22, 18:3, 18:7, 60:1, 86:17
notice [3] - 5:21, 9:3, 39:17
notices [1] - 39:19
notified [1] - 131:24
number [5] - 65:23, 68:24, 70:10, 86:3, 134:6
Number [1] - 135:10
numbered [3] - 1:18, 104:13, 184:10
numbering [1] - 135:22
numbers [8] - 65:12, 65:24, 67:21, 70:5, 71:7, 160:16, 164:18, 164:24

O

o'clock [1] - 116:13
oath [1] - 149:21
object [6] - 33:5, 95:4, 95:6, 148:5, 170:12, 173:6
objecting [5] - 18:7, 25:25, 59:6, 93:25, 94:19
objection [29] - 20:25, 50:7, 50:17, 53:5, 55:16, 57:8, 57:9, 57:21, 57:22, 58:2, 58:3, 58:14, 59:1, 59:11, 59:25, 60:2, 60:5, 60:19, 62:20, 64:5, 77:16, 93:20, 118:22, 123:14, 129:13, 136:21, 137:5, 137:18, 152:13
objections [2] - 7:2, 94:24
observations [1] - 174:24
obviously [7] - 6:25, 10:8, 12:10, 39:23, 90:2, 93:25, 118:5
occasions [1] - 129:11
occurred [3] - 30:25, 91:18, 184:11
OCTOBER [2] - 1:15, 5:1
October [2] - 1:18, 184:18
odd [1] - 90:17
OF [11] - 1:1, 1:4, 1:4, 1:11, 2:11, 2:17, 2:18, 3:4, 184:1, 184:1
off-site [1] - 122:18
offer [5] - 12:13, 59:21, 59:22, 96:7, 184:15
offered [4] - 96:8, 96:11, 169:22, 184:16
offering [2] - 20:3, 152:2
OFFICE [2] - 2:11, 2:18
office [2] - 33:12, 131:25
Official [2] - 184:3, 184:22
officials [2] - 89:11, 109:20
oiled [1] - 40:2
old [7] - 40:13, 80:21, 86:8, 86:10, 110:9, 110:12
older [1] - 90:23
Ole [17] - 21:8, 22:11, 22:18, 23:16, 73:2, 120:19, 121:15, 122:22, 171:14, 172:11, 172:14, 177:25, 178:5, 179:5, 179:22, 180:2
Olympic [7] - 46:15, 46:16, 46:17, 46:22, 49:2, 49:3, 121:14
Olympic-sized [1] - 121:14
ON [1] - 1:5
on-site [2] - 123:8, 125:25
once [6] - 11:21, 25:17, 27:17, 53:20, 80:9, 111:2
one [88] - 5:16, 7:8, 7:12, 10:6, 13:13, 14:19, 24:13, 30:7, 30:18, 30:19, 31:14, 33:15, 33:16, 34:8, 34:16, 38:24, 39:16, 39:18, 43:17, 43:19, 43:23, 43:24, 44:14, 44:15, 44:17, 44:18, 44:20, 44:21, 44:22, 44:23, 45:1, 45:3, 45:15, 54:8, 56:23, 60:23, 69:25, 70:7, 70:16, 72:1, 73:10, 74:24, 75:4, 76:2, 91:1, 92:7, 92:18, 92:25, 93:8, 94:8, 95:19, 98:14, 98:24, 101:13, 104:19, 116:5, 118:8, 118:9, 127:1, 127:3, 127:9, 134:6, 141:18, 141:21, 142:20, 144:3, 144:4, 145:3, 147:18, 147:22, 148:18, 150:12, 154:14, 154:20, 161:8, 164:2, 164:4, 164:12, 165:12, 168:2, 170:4, 171:17, 175:20, 176:8, 180:7
ones [2] - 39:15, 85:2
ongoing [3] - 78:17, 112:25, 142:16
open [4] - 11:2, 157:14, 157:16, 184:11
opened [2] - 7:13, 94:3
opening [14] - 5:24, 7:9, 9:11, 13:23, 14:23, 16:4, 91:21, 92:10, 92:17, 92:23, 93:1, 94:1, 94:16, 95:4
opens [5] - 9:15, 13:25, 14:6, 14:12, 116:16
operate [1] - 17:19
operated [1] - 42:12
operating [2] - 135:15, 157:9
operation [9] - 22:7, 23:4, 24:14, 72:25, 73:1, 73:4, 135:17, 136:2, 181:9
operations [6] - 17:24, 21:14, 21:18, 26:22, 78:17, 90:21
opine [1] - 99:7
opinion [54] - 50:12, 57:5, 74:16, 74:20, 99:10, 99:12, 99:13, 99:17, 102:17, 105:12, 105:15, 112:4, 112:24, 115:2, 115:4, 118:13, 118:18, 122:20, 125:22, 126:4, 129:19, 132:8, 134:24, 136:19, 137:2, 137:13, 137:17, 137:19, 139:4, 139:7, 139:24, 140:17, 140:21, 148:25, 150:16, 150:25, 151:5, 151:6, 151:9, 151:11, 151:12, 151:14, 151:15, 151:17, 151:20, 152:3, 152:12, 152:22, 154:3, 165:20, 171:18, 179:13
opinions [42] - 12:10, 12:11, 21:1, 42:10, 56:5, 69:20, 72:7, 72:10, 72:23, 73:6, 73:17, 73:23, 97:15, 98:8, 98:23, 104:4, 105:1, 107:22, 116:3, 116:18, 120:24, 121:9, 122:16, 133:8, 133:18, 134:16, 136:8, 138:15, 140:12, 143:21, 148:22, 149:22, 153:25, 157:22, 157:25, 162:10, 162:20, 164:3,

165:3, 165:4, 165:21, 167:11
opportunity [3] - 129:9, 175:17, 175:23
opposed [2] - 83:6, 88:24
opposing [1] - 9:11
options [1] - 53:23
order [4] - 149:12, 150:3, 150:4, 154:20
orders [4] - 154:16, 154:19, 154:21, 157:4
organic [6] - 36:8, 57:2, 68:23, 69:3, 69:17, 163:23
organize [1] - 31:5
organized [1] - 120:12
orient [4] - 30:14, 53:25, 97:18, 163:13
orientation [1] - 155:19
oriented [1] - 142:4
original [6] - 106:19, 134:3, 134:21, 142:11, 160:23
ourselves [2] - 47:10, 53:25
outline [9] - 106:12, 107:5, 108:16, 113:22, 118:7, 130:6, 142:10, 158:6
outlining [2] - 43:24, 108:17
outside [22] - 25:21, 27:7, 33:20, 34:10, 43:21, 44:22, 57:13, 60:20, 61:10, 61:14, 76:17, 77:19, 89:25, 119:13, 132:24, 134:19, 137:23, 148:8, 166:5, 173:13, 182:7, 182:13
overarching [1] - 9:17
overflight [1] - 43:6
overlaid [2] - 106:3, 106:12
overreaching [2] - 15:14, 16:18
overtaking [1] - 130:9
OWENS [1] - 2:14
Owens [1] - 182:18
own [5] - 31:5, 64:14, 64:23, 170:24, 171:4
owned [2] - 35:5, 140:4
ownership [1] - 103:13
oxygen [9] - 68:21, 68:22, 69:4, 69:5, 69:21, 69:22, 71:6, 71:7, 71:8

P

P-i-e-z-o-m-e-t-e-r-s [1] - 162:3
P.O [1] - 2:19
page [66] - 5:16, 51:23, 52:25, 56:13, 60:25, 63:24, 64:20, 68:6, 72:12, 73:24, 73:25, 76:12, 76:25, 77:1, 77:2, 79:14, 79:17, 80:8, 80:11, 80:15, 80:22, 81:21, 82:17, 82:20, 83:1, 83:4, 83:15, 84:23, 85:8, 85:9, 85:10, 85:11, 85:23, 87:18, 89:9, 89:15, 89:16, 97:6, 102:10, 103:21, 103:24, 104:23, 105:13, 108:14, 109:8, 109:11, 121:4, 122:1, 138:21, 140:1, 141:18, 141:21, 145:23, 156:4, 162:18, 162:22, 162:24, 163:2, 163:11, 163:21, 163:22, 167:2, 167:9, 167:12, 167:15, 172:18
Page [17] - 8:14, 18:25, 24:9, 24:12, 26:17, 61:23, 62:4, 70:18, 85:1, 85:4, 85:22, 88:23, 90:3, 90:9, 98:9, 105:22, 176:18
pages [5] - 72:2, 81:16, 81:19, 82:15, 88:11
paid [4] - 41:20, 41:22, 41:23, 41:24
palpable [1] - 75:5
PAPER [2] - 1:9, 3:14
paper [23] - 8:18, 41:17, 47:17, 47:18, 48:5, 48:8, 48:16, 48:17, 48:18, 48:25, 49:9, 50:13, 50:18, 58:16, 67:19, 69:15, 70:4, 89:18, 108:23, 110:20, 156:20, 156:21, 164:6
Paper [6] - 72:18, 166:10, 166:13, 171:3, 171:14, 173:22
Paper's [1] - 166:12
paper-making [1] - 58:16
paragraph [44] - 24:12, 53:24, 54:15, 55:21, 66:17, 72:15, 72:22, 73:15, 74:1, 80:12, 89:3, 89:9, 90:10, 98:22, 109:10, 109:11, 109:15, 121:2, 121:6, 121:8, 122:14, 131:18, 133:12, 134:8, 134:13, 134:16, 135:10, 135:21, 135:25, 138:19, 139:1, 139:2, 139:3, 139:13, 139:14, 149:3, 167:12, 167:15, 167:18, 167:22, 169:11, 169:13, 172:1, 172:4
paragraphs [8] - 77:4, 77:7, 83:23, 83:25, 98:11, 98:13, 138:22, 139:25
pardon [1] - 62:7
Pardue [32] - 8:7, 12:25, 22:24, 25:5, 26:17, 28:3, 28:4, 28:18, 33:2, 60:19, 61:9, 61:17, 74:20, 82:20, 88:22, 96:6, 96:24, 97:9, 103:16, 109:17, 131:19, 137:1, 140:21, 141:13, 152:14, 165:22, 165:25, 166:9, 168:11, 173:2, 173:18, 176:20
PARDUE [1] - 28:13
Pardue's [3] - 8:4, 63:9, 95:6
parks [1] - 6:2
Parks [1] - 6:18
part [32] - 6:15, 19:19, 20:9, 24:2, 26:4, 26:11, 31:7, 40:5, 47:1, 51:15, 56:15, 57:2, 71:12, 71:22, 71:24, 72:1, 75:4, 82:12, 84:10, 85:5, 90:23, 105:25, 123:16, 123:17, 141:16, 165:10, 167:10, 167:22, 168:22, 170:10, 181:4
partially [1] - 80:10
participate [1] - 39:12
participating [1] - 13:16
particle [4] - 100:12, 100:14, 101:23, 101:25
particles [20] - 49:18, 100:1, 100:6, 100:18, 101:2, 101:3, 112:13, 114:13, 114:15, 125:5, 144:4, 153:3, 153:5, 153:13, 153:14, 155:4, 156:18, 156:21, 156:23
particular [7] - 16:13, 50:20, 53:13, 55:9, 141:18, 164:8, 164:11
particularly [3] - 151:19, 169:14, 181:5
particulate [1] - 165:24
parties [6] - 16:21, 41:11, 79:8, 130:22, 175:17, 184:9
parties' [1] - 94:25
partnered [1] - 122:22
partnership [1] - 123:12
parts [2] - 5:19, 75:3
party [7] - 1:7, 15:21, 16:2, 16:8, 29:19, 94:12, 173:24
Pasadena [7] - 42:18, 42:20, 42:23, 50:13, 58:23, 62:6, 171:7
pass [1] - 156:20
Passaic [2] - 34:9, 34:24
passed [1] - 114:18
passing [1] - 114:9
past [2] - 41:9, 145:22
patience [2] - 27:22, 97:2
PAULA [1] - 4:8
pay [2] - 41:24, 116:13
paying [2] - 45:20, 182:9
PCBs [1] - 35:24
peanut [2] - 128:13, 128:14
peer [4] - 38:19, 39:2, 39:7, 39:8
peer-review [1] - 39:7
peer-reviewed [1] - 38:19
pen [1] - 97:22
penalties [1] - 16:19
penalty [6] - 5:12, 11:8, 11:10, 11:13, 12:8, 99:15
penetrate [2] - 168:18, 168:19
people [18] - 6:9, 15:20, 17:2, 39:11, 40:14, 51:12, 53:1, 53:2, 80:17, 92:2, 92:11, 93:17, 93:25, 126:13, 144:9, 144:15, 159:21, 183:2
per [4] - 147:11, 147:12, 148:3, 164:21
percent [28] - 52:6, 52:7, 52:18, 56:25, 65:7, 65:12, 65:13, 65:25, 66:1, 66:11, 66:12, 66:21, 66:25, 67:3, 67:7, 123:21, 123:22, 124:2, 124:3, 124:4, 124:7, 125:9, 125:19, 125:21, 168:12
percentage [2] - 75:1, 123:25
perforated [1] - 161:19
performance [1] - 172:21
performed [1] - 129:22
performing [1] - 172:5
perhaps [2] - 7:6, 174:3
period [28] - 10:15, 11:8, 11:10, 11:13, 12:8, 22:8, 23:3, 23:15, 32:7, 32:10, 40:22, 62:2, 62:13, 73:5, 98:25, 99:15, 99:18, 113:13, 113:24, 113:25, 114:11, 117:20, 118:11, 126:10, 126:16, 153:18, 158:3
periods [1] - 106:4
permanently [2] - 54:3, 105:8
permission [9] -

32:18, 76:7, 76:23, 77:9, 80:24, 83:1, 83:11, 92:3, 94:21
permit [15] - 77:11, 80:1, 84:25, 86:15, 86:17, 86:21, 87:6, 87:10, 87:24, 91:15, 91:21, 92:1, 92:17, 92:20, 95:13
permits [1] - 172:20
permitting [3] - 90:19, 92:13, 96:7
personal [3] - 22:25, 50:7, 53:5
personally [1] - 33:3
pertaining [1] - 172:24
pertinent [2] - 98:12, 98:21
Peterson [17] - 21:8, 22:11, 22:18, 23:16, 73:2, 120:20, 121:16, 122:22, 171:14, 172:11, 172:14, 178:1, 178:5, 179:5, 179:22, 180:2
petro [4] - 35:2, 36:20, 36:25, 39:23
PG [1] - 147:11
pH [1] - 109:21
Ph.D [2] - 28:13, 30:5
phone [1] - 35:19
PHONE [7] - 2:6, 2:13, 2:20, 3:7, 3:16, 3:22, 4:7
photo [3] - 110:19, 113:6, 117:22
photograph [11] - 105:20, 107:2, 107:15, 107:19, 107:25, 108:6, 108:9, 108:15, 112:4, 113:19, 153:18
photographs [7] - 96:21, 106:4, 107:10, 111:20, 129:23, 130:7, 140:17
photography [2] - 41:5
photos [1] - 116:14
phrase [1] - 13:4
phrased [1] - 129:3
physical [2] - 108:25, 124:12
physically [2] - 124:22, 174:17
picked [1] - 161:2
picogram [2] - 147:12, 147:19
picograms [2] - 148:3, 164:21
picture [7] - 43:13, 79:18, 113:12, 114:6, 115:22, 118:12, 118:19
pictures [1] - 43:7
piece [3] - 35:6, 127:18, 160:3
pieces [1] - 49:19
piezometers [1] - 162:1
pipe [6] - 68:25, 124:8, 161:19, 161:22, 161:24, 161:25
pit [30] - 20:22, 20:24, 26:3, 44:17, 44:19, 44:20, 44:22, 45:1, 45:4, 45:6, 45:14, 45:15, 60:13, 86:4, 91:14, 105:15, 108:19, 108:20, 111:25, 113:15, 113:16, 114:4, 114:5, 115:6, 118:17, 127:12, 138:18, 158:8
Pit [3] - 45:15, 104:17, 160:22
pits [62] - 10:12, 10:16, 12:7, 20:8, 22:18, 25:11, 26:19, 26:21, 27:2, 35:5, 35:8, 35:9, 36:23, 40:21, 42:20, 42:22, 45:8, 46:21, 58:1, 68:12, 72:14, 73:10, 74:21, 74:24, 85:9, 91:5, 99:6, 99:8, 100:2, 102:16, 104:5, 104:8, 104:10, 104:12, 104:17, 105:16, 106:4, 107:6, 107:9, 113:20, 114:2, 115:9, 117:21, 117:22, 118:1, 118:8, 118:14, 126:6, 126:9, 133:20, 139:9, 141:23, 142:5, 142:9, 142:16, 145:22, 154:12, 157:4, 158:3, 170:25, 173:21, 177:5
Pits [1] - 6:5
place [3] - 55:7, 99:18, 135:22
placed [6] - 56:6, 74:13, 75:2, 116:17, 126:9, 161:24
places [1] - 158:13
PLAINTIFF [2] - 2:3, 2:17
plaintiff [1] - 81:6
Plaintiff [1] - 1:4
plaintiff's [3] - 80:5, 81:4, 83:24
Plaintiffs' [6] - 17:13, 18:15, 81:7, 96:19, 97:6, 109:15
plane [1] - 43:7
planning [1] - 82:19
plant [44] - 20:3, 20:14, 20:21, 40:13, 42:12, 42:18, 42:20, 42:23, 42:25, 45:23, 47:14, 47:15, 47:16, 49:1, 49:4, 49:9, 50:4, 51:13, 51:19, 51:22, 52:5, 52:6, 52:23, 53:12, 53:13, 53:21, 58:1, 58:23, 59:20, 60:13, 62:1, 62:7, 62:8, 62:9, 67:10, 67:23, 73:9, 75:9, 75:11, 75:18, 77:13, 99:6, 124:11, 135:22
plants [1] - 49:25
plat [3] - 103:6, 103:11
plats [1] - 103:7
play [3] - 104:3, 116:2, 133:17
played [1] - 97:14
plenty [1] - 27:9
podium [1] - 28:11
POGGE [1] - 3:10
point [34] - 8:19, 10:5, 13:13, 15:17, 23:20, 26:14, 26:16, 32:20, 59:22, 76:2, 79:14, 80:13, 86:4, 87:12, 88:18, 90:20, 91:7, 92:13, 92:16, 93:23, 95:10, 95:11, 97:22, 99:23, 103:16, 111:16, 143:11, 145:25, 149:8, 149:23, 154:11, 165:12, 183:7
pointed [2] - 13:9, 139:18
pointer [7] - 30:10, 30:14, 43:25, 106:5, 139:16, 142:8, 160:13
points [2] - 134:4, 134:21
polluted [1] - 34:13
pollution [6] - 122:11, 136:12, 136:19, 137:2, 137:14, 174:11
Pollution [2] - 174:21, 182:24
pond [20] - 70:12, 70:15, 70:19, 70:21, 70:23, 71:4, 75:16, 80:21, 85:3, 86:1, 86:2, 86:8, 86:10, 98:15, 98:17, 159:6, 179:10
Pond [2] - 70:21, 70:23
ponds [4] - 74:7, 98:14, 98:24, 168:5
pool [5] - 46:15, 46:16, 46:17, 49:2, 49:16
pools [7] - 46:19, 46:22, 47:4, 49:3, 50:1, 52:2, 121:14
porous [2] - 159:1, 159:7
portion [16] - 14:7, 15:1, 56:11, 65:1, 86:13, 90:3, 90:11, 104:23, 105:12, 134:19, 136:11, 137:15, 139:11, 144:19, 154:25, 167:2
portions [6] - 78:20, 82:13, 111:24, 113:8, 113:20, 184:7
position [7] - 10:18, 14:5, 15:8, 16:1, 16:8, 23:5, 27:1
positions [5] - 15:18, 170:20, 175:18, 182:12, 182:22
possible [3] - 54:1, 98:20, 135:2
possibly [2] - 25:23, 98:16
poster [1] - 103:1
potential [3] - 10:21, 93:1, 178:24
potentially [1] - 93:5
practically [1] - 169:16
practice [6] - 33:10, 72:17, 72:19, 89:17, 89:20, 90:14
practices [1] - 68:12
preadmitted [9] - 18:5, 18:6, 18:14, 18:24, 19:4, 24:8, 25:25, 71:17, 178:14
preadmitting [1] - 19:6
precaution [1] - 136:3
predicate [1] - 83:2
predict [1] - 7:2
prefer [1] - 95:25
prejudice [1] - 11:22
prejudicial [6] - 7:24, 11:15, 18:9, 87:15, 150:10
presence [5] - 25:21, 27:7, 60:20, 61:10, 61:14
Present [2] - 96:25, 152:17
present [18] - 27:18, 57:1, 57:2, 57:18, 58:19, 63:19, 72:17, 78:3, 78:9, 78:15, 89:17, 104:1, 119:23, 126:5, 127:22, 136:13, 144:5, 158:2
present) [1] - 148:14
presented [8] - 11:1, 11:6, 12:15, 12:17, 16:5, 149:6, 149:19, 150:18
presents [1] - 67:16
preserve [1] - 94:20
Presiding [1] - 1:19
press [1] - 48:15
pretty [1] - 38:8
prevent [1] - 113:5
preview [2] - 63:1, 130:12
previous [7] - 91:3, 145:9, 145:10, 162:11, 164:7, 164:21, 164:23
previously [1] - 140:5
primarily [3] - 31:14, 109:21, 130:14
primary [2] - 52:2, 124:1
private [2] - 120:11, 133:9
probationary [1] - 32:7
probative [1] - 11:16
problem [16] - 11:13, 12:6, 14:6, 15:1, 34:13, 95:3, 95:5, 126:12, 136:12, 136:20, 137:2, 137:10, 137:14, 150:17, 150:22, 166:22

problems [3] - 10:21, 32:18, 133:19
proceed [6] - 27:24, 28:9, 28:10, 61:16, 95:23, 173:15
proceeding [2] - 83:17, 180:17
proceedings [14] - 1:19, 27:19, 57:14, 61:10, 76:19, 77:21, 90:1, 132:25, 137:25, 148:10, 166:6, 173:14, 184:8, 184:14
Proceedings [1] - 1:21
proceeds [1] - 180:1
process [28] - 13:16, 39:7, 39:12, 41:12, 42:12, 47:19, 48:23, 49:6, 49:11, 51:15, 52:14, 58:22, 69:15, 72:13, 73:18, 73:19, 73:20, 75:10, 86:21, 121:17, 121:18, 121:22, 126:23, 135:14, 141:17, 176:2, 177:11, 177:15
processes [7] - 36:22, 40:20, 41:18, 58:16, 59:20, 72:19, 89:19
processor [4] - 35:3, 36:20, 36:25, 39:24
produced [6] - 1:21, 5:14, 56:9, 60:13, 63:4, 121:20
product [3] - 36:21, 69:15, 69:16
production [1] - 19:17
products [3] - 48:3, 48:4, 48:21
professional [1] - 29:5
professor [5] - 28:19, 31:21, 31:23, 116:24, 116:25
professors [1] - 39:3
program [4] - 32:17, 33:24, 33:25, 34:3
programs [2] - 31:3, 31:6
prohibited [1] - 98:18
promised [1] - 183:5
proof [2] - 59:22, 184:16
proper [4] - 15:25, 95:18, 96:13, 98:19
properly [2] - 81:13, 87:15
properties [1] - 51:17
property [18] - 47:21, 103:13, 106:8, 106:9, 106:12, 106:22, 108:16, 121:13, 139:19, 140:13, 140:18, 142:11, 170:1, 170:25, 171:4, 174:18, 181:11
proposal [1] - 178:7
proposed [2] - 35:20, 180:17
protected [1] - 123:10
PROTECTION [1] - 2:18
provide [3] - 56:4, 133:24, 150:10
provided [3] - 53:11, 100:9, 148:20
provides [3] - 142:15, 172:13, 172:19
Proving [1] - 35:11
published [5] - 38:13, 38:17, 38:18, 81:19, 82:16
pull [24] - 23:11, 29:1, 43:3, 63:24, 68:5, 77:6, 97:5, 98:11, 99:25, 102:23, 105:22, 109:6, 115:16, 115:20, 120:14, 121:25, 127:5, 131:9, 133:5, 138:2, 138:25, 139:1, 171:10, 178:13
pulling [2] - 6:15, 148:16
pulls [2] - 66:14, 66:15
pump [14] - 49:22, 52:16, 66:14, 75:8, 75:17, 75:23, 75:24, 75:25, 76:10, 80:1, 124:17, 124:20, 124:22, 124:23
pumpable [1] - 123:2
pumping [5] - 54:8, 54:9, 75:17, 76:8, 88:8
purported [1] - 151:23
purpose [7] - 79:3, 104:9, 151:4, 152:1, 152:15, 160:2
purposes [7] - 12:5, 24:19, 26:2, 80:10, 95:12, 95:13, 151:13
push [2] - 127:18, 127:19
pushed [1] - 44:3
put [28] - 9:3, 10:12, 20:1, 21:19, 22:11, 22:16, 22:18, 23:16, 47:22, 52:8, 69:3, 75:24, 82:7, 92:1, 93:12, 110:21, 111:5, 117:13, 119:25, 125:13, 153:9, 158:22, 162:23, 163:3, 163:6, 165:14, 177:21, 178:3
putting [2] - 15:16, 37:19

Q

qualified [1] - 96:9
qualitatively [1] - 106:16
quality [6] - 56:8, 56:10, 56:12, 109:18, 119:5, 119:7
QUALITY [1] - 1:6
quantify [1] - 18:1
quantitatively [1] - 106:17
quantities [1] - 17:20
quantity [1] - 74:2
quarter [3] - 106:21, 106:22, 106:23
Quebedeaux [14] - 128:7, 128:15, 169:8, 174:5, 175:8, 177:3, 177:11, 178:20, 178:23, 179:11, 179:23, 180:11, 180:18, 180:25
Quebedeaux's [1] - 180:3
QUESTION [1] - 177:3
questioning [4] - 83:18, 91:18, 93:4, 128:12
QUESTIONS [2] - 28:16, 166:8
questions [6] - 58:22, 61:14, 63:2, 166:1, 166:16, 175:25
quick [3] - 57:16, 77:25, 126:9
quicker [1] - 134:22
quickly [2] - 97:23, 126:6
quite [2] - 35:19, 164:24
quote [2] - 13:17, 169:1

R

rabbit [1] - 95:19
rail [1] - 54:17
rain [2] - 134:2, 134:18
rains [2] - 134:23, 134:25
rainwater [1] - 126:22
raise [5] - 5:6, 9:25, 19:12, 28:4, 112:20
raised [2] - 14:25, 19:15
raising [1] - 7:4
ran [2] - 49:4, 75:8
rapidly [2] - 168:4, 168:7
rather [1] - 95:18
raw [1] - 68:24
re [1] - 61:9
re-takes [1] - 61:9
reached [2] - 37:22, 125:19
reaches [2] - 66:20, 66:24
reaching [1] - 136:8
react [1] - 48:1
read [32] - 21:5, 24:19, 24:20, 53:24, 54:16, 74:6, 88:11, 89:22, 98:12, 109:16, 109:24, 132:4, 133:12, 133:15, 135:11, 135:24, 136:11, 137:15, 140:3, 148:18, 167:10, 167:14, 167:23, 167:25, 168:1, 168:16, 168:22, 169:9, 169:12, 172:2, 172:4
reading [7] - 14:6, 15:1, 90:24, 93:1, 131:21, 136:15, 165:2
readings [4] - 144:19, 149:20, 163:8, 163:14
reads [3] - 38:24, 89:4, 90:10
ready [6] - 27:12, 27:24, 97:3, 135:15, 183:10, 183:12
real [6] - 67:12, 70:4, 71:20, 97:22, 112:15, 140:4
realize [1] - 136:1
really [19] - 39:7, 45:22, 91:19, 99:5, 100:15, 102:3, 114:15, 116:12, 117:7, 123:12, 124:24, 126:17, 153:12, 155:3, 155:4, 158:25, 160:4, 160:6, 160:7
reason [5] - 19:12, 20:24, 38:25, 78:4, 78:6
REASONER [7] - 3:8, 6:25, 7:25, 8:10, 8:25, 9:7, 51:3
rebuttal [1] - 149:17
recalled [1] - 9:1
recent [1] - 119:22
recently [2] - 64:14, 157:14
recess [1] - 183:13
recollection [1] - 176:14
recollections [1] - 78:10
reconsider [1] - 7:18
RECORD [2] - 1:1, 1:13
Record [3] - 1:21, 184:10, 184:14
record [9] - 5:3, 12:5, 81:3, 83:16, 83:23, 89:22, 96:5, 132:13, 141:5
records [7] - 40:13, 41:3, 45:19, 74:12, 87:18, 113:2, 140:9
recovered [1] - 149:4
recycled [1] - 109:5
red [1] - 142:10
redact [2] - 78:20, 79:18
redacted [14] - 60:24, 79:2, 80:5, 80:7, 80:10, 81:12, 81:13, 86:12, 87:15, 87:17, 90:4, 90:6, 90:11, 90:23
redaction [2] - 24:9, 78:21
redactions [4] - 18:18, 19:4, 87:21
reduced [1] - 134:20
reducing [1] - 140:9
Reese's [1] - 128:13
refer [3] - 84:1, 92:8, 92:9
reference [10] - 10:14, 14:16, 16:20, 18:23, 24:10, 24:13, 60:24, 94:15, 121:15, 145:25
referenced [4] - 82:11,

82:14, 137:14, 148:25
references [7] - 15:12, 57:23, 68:6, 86:8, 86:10, 145:8, 149:15
referencing [3] - 9:25, 88:24, 137:8
referral [1] - 6:3
referred [2] - 8:1, 15:21
referring [9] - 9:14, 10:2, 18:21, 50:19, 64:8, 91:14, 133:21, 134:2, 179:8
refers [5] - 6:2, 80:12, 80:20, 134:18, 135:22
reflect [4] - 5:9, 83:16, 87:9, 87:18
reflected [2] - 60:12, 63:4
reflecting [1] - 53:8
reflective [1] - 70:6
reflects [1] - 184:14
refresh [2] - 135:3, 176:14
regard [9] - 7:9, 9:25, 26:14, 26:25, 50:18, 81:13, 81:15, 96:9, 96:12
regarding [2] - 77:8, 89:13
regardless [1] - 91:14
regular [3] - 41:5, 121:17, 129:25
regulations [1] - 172:23
reinforcing [1] - 134:1
reject [1] - 39:5
relate [3] - 90:5, 90:12, 157:25
related [7] - 21:17, 80:19, 82:11, 82:13, 88:4, 133:20, 179:5
relates [5] - 17:18, 21:14, 80:16, 86:16, 139:7
relating [7] - 79:15, 79:17, 86:16, 86:22, 87:13, 88:13, 133:14
relatively [1] - 45:25
release [5] - 8:4, 8:5, 8:11, 140:23, 165:13
released [8] - 7:16, 7:20, 8:18, 12:16, 100:9, 118:13, 118:16, 154:1
releases [1] - 142:16
releasing [1] - 162:14
relevance [2] - 11:22, 36:18
relevant [9] - 11:24, 12:12, 21:1, 23:25, 24:4, 26:14, 41:17, 95:12, 95:13
relied [1] - 171:17
rely [1] - 8:20
relying [3] - 8:15, 9:10, 149:25
remain [1] - 105:19
remained [1] - 35:10
remaining [1] - 85:2
remains [1] - 52:12
Remedial [1] - 141:15
remediating [2] - 13:20, 14:3
remediation [1] - 14:17
remember [12] - 9:8, 14:4, 94:17, 97:8, 123:25, 125:7, 125:14, 164:23, 166:24, 167:10, 167:12, 168:25
remind [4] - 55:6, 99:3, 125:18, 181:8
removal [3] - 74:8, 87:24, 89:21
remove [5] - 79:19, 80:24, 87:5, 87:10, 121:16
removed [3] - 85:10, 109:19, 167:19
removing [4] - 86:16, 86:18, 86:22, 168:5
render [1] - 169:16
renew [1] - 118:21
reorient [2] - 105:23, 167:2
rep [1] - 23:3
rep's [1] - 25:3
repair [1] - 132:15
repaired [4] - 126:15, 129:24, 132:3, 132:9
repeated [2] - 62:13, 65:13
repeatedly [1] - 65:13
rephrase [3] - 50:9, 55:19, 115:4
report [9] - 5:23, 26:17, 91:1, 98:7, 105:25, 122:10, 135:7
reported [6] - 1:21, 6:6, 109:25, 168:4, 168:17, 184:12
reporter [9] - 57:13, 76:18, 77:20, 89:25, 132:24, 137:24, 148:9, 166:5, 173:13
Reporter [2] - 184:3, 184:22
Reporter's [3] - 1:21, 184:9, 184:13
REPORTER'S [2] - 1:1, 1:13
represent [2] - 158:13, 166:10
representative [12] - 23:7, 25:7, 170:6, 170:10, 170:19, 170:23, 173:1, 173:7, 173:10, 173:19, 176:8, 181:23
represents [1] - 154:11
request [4] - 6:3, 24:23, 81:2, 87:16
requested [1] - 184:8
require [2] - 94:21, 132:15
required [6] - 5:24, 14:8, 14:9, 92:20, 94:19, 172:21
requirements [1] - 96:7
research [11] - 30:8, 30:13, 30:17, 30:23, 31:5, 31:9, 31:10, 31:15, 31:16, 32:9, 32:17
researching [1] - 35:9
resembled [1] - 109:22
resolution [2] - 140:1, 140:3
resolve [2] - 35:16, 150:15
resolved [1] - 140:4
resources [1] - 30:13
respect [7] - 14:2, 33:21, 64:2, 79:13, 125:4, 148:25, 165:23
respects [1] - 172:6
respond [10] - 15:14, 15:18, 16:5, 16:12, 16:16, 17:4, 39:6, 84:6, 85:19, 93:15
response [3] - 5:11, 5:13, 40:1
responsible [3] - 53:13, 173:2, 173:20
responsive [1] - 6:23
rest [1] - 146:19
restroom [1] - 78:1
result [4] - 5:24, 70:7, 74:8, 81:25
results [33] - 61:20, 61:25, 62:1, 62:4, 62:5, 62:15, 63:10, 64:2, 64:12, 64:15, 64:20, 64:23, 65:10, 68:10, 68:18, 71:2, 71:3, 71:4, 71:12, 71:20, 79:15, 79:20, 81:16, 81:22, 84:23, 84:25, 85:1, 85:2, 85:8, 86:1, 159:25, 160:25, 162:25
resume [3] - 28:21, 28:22, 32:9
resumed [1] - 135:18
return [1] - 39:11
review [20] - 39:7, 39:13, 39:17, 42:15, 50:10, 50:15, 50:21, 53:10, 53:17, 57:4, 65:5, 74:15, 74:25, 87:21, 96:4, 108:23, 129:9, 136:25, 137:12, 140:16
reviewed [8] - 17:5, 38:19, 39:2, 41:14, 76:3, 102:16, 112:20, 133:7
reviewer [1] - 39:8
reviewing [1] - 6:6
revolution [1] - 34:12
Rhodes [1] - 30:2
Rice [1] - 116:24
ride [1] - 75:24
rigorous [1] - 39:7
river [47] - 34:9, 34:11, 34:13, 34:16, 34:24, 43:10, 76:24, 77:10, 82:18, 91:16, 92:6, 92:21, 93:9, 93:14, 94:14, 94:22, 99:8, 100:8, 100:10, 100:21, 101:16, 104:6, 114:8, 119:2, 126:2, 126:21, 128:5, 130:9, 131:1, 140:23, 140:24, 144:5, 144:24, 145:8, 149:7, 149:23, 150:2, 153:5, 153:10, 153:11, 154:5, 154:24, 155:18, 155:20, 159:6, 159:15
River [29] - 6:5, 21:3, 26:20, 43:10, 85:3, 85:13, 85:15, 86:4, 99:20, 100:21, 105:14, 114:23, 114:24, 115:7, 115:11, 115:12, 115:14, 117:23, 118:1, 118:19, 129:21, 131:4, 136:14, 140:5, 141:22, 159:10, 169:17, 170:2, 179:11
road [1] - 104:1
ROBIN [1] - 3:8
rOCK [1] - 2:14
role [5] - 30:7, 97:15, 104:3, 116:2, 133:18
room [3] - 52:13, 53:21, 176:3
ROSS [1] - 3:11
Rouge [2] - 29:8, 35:3
roughly [1] - 67:12
Rule [1] - 11:16
rule [1] - 27:17
rules [1] - 172:23
ruling [1] - 79:4
rulings [9] - 7:10, 10:10, 10:18, 11:6, 11:11, 11:21, 11:23, 12:1, 81:9
run [1] - 49:15
runs [1] - 155:20
rushed [1] - 161:22
Rutgers [1] - 34:18
RYAN [1] - 2:11

S

safety [1] - 38:12
sample [9] - 66:15, 127:20, 154:14, 156:19, 160:8, 162:17, 164:19, 165:1, 165:13
sampled [1] - 161:23
samples [4] - 41:13, 80:21, 154:12, 158:15
sampling [2] - 6:6, 163:1
San [32] - 6:5, 21:3, 26:20, 43:9, 85:3, 85:13, 85:15, 86:4, 99:20, 100:20, 102:16, 105:14, 114:23, 114:24, 115:7, 115:11, 115:12, 115:14, 117:23, 117:25, 118:18, 129:21, 131:4, 136:14, 140:5, 141:22, 145:13, 159:10, 160:19, 169:17,

170:2, 179:11
sand [7] - 119:24, 127:24, 128:3, 131:1, 158:21, 159:2
sands [1] - 126:20
satellite [1] - 107:12
satisfactory [1] - 179:19
saturated [2] - 125:10, 125:12
save [1] - 128:12
saved [1] - 41:3
saw [5] - 9:11, 129:23, 130:1, 162:12
scale [2] - 144:24, 147:2
scales [1] - 11:17
scheme [1] - 122:23
SCHRADER [46] - 3:19, 10:22, 11:9, 12:13, 12:19, 13:2, 13:5, 13:12, 50:7, 53:5, 55:16, 57:8, 58:3, 58:7, 59:10, 59:19, 61:4, 61:8, 62:22, 64:5, 115:1, 118:21, 123:14, 129:2, 129:13, 136:21, 137:5, 137:18, 148:5, 150:8, 150:12, 150:17, 150:23, 151:21, 166:8, 167:1, 167:8, 169:4, 169:10, 171:10, 172:17, 173:17, 176:20, 177:21, 178:13, 183:5
Schrader [3] - 166:10, 173:16, 177:24
science [1] - 39:16
sciences [1] - 30:3
scientific [1] - 41:16
scope [1] - 123:15
Screen [1] - 19:11
screen [3] - 104:25, 110:25, 113:22
screening [2] - 6:1, 6:4
scroll [7] - 63:25, 108:13, 116:14, 143:15, 143:24, 156:10, 156:16
scrolling [1] - 111:20
sea [10] - 54:10, 54:13, 54:20, 55:15, 104:15, 104:18, 105:2, 105:4, 106:15, 106:25
seated [9] - 27:21, 28:7, 57:20, 63:20, 78:5, 97:1, 133:2, 148:15, 152:18
second [34] - 24:13, 39:1, 40:19, 51:23, 56:13, 56:22, 63:24, 67:6, 73:15, 73:24, 73:25, 80:8, 80:11, 84:6, 91:12, 98:15, 98:17, 99:10, 100:4, 109:11, 122:17, 123:19, 126:11, 127:12, 131:12, 134:8, 137:22, 163:3, 167:9, 167:15, 167:17, 167:21, 169:11, 169:12
secondary [4] - 52:8, 122:24, 125:9, 135:23
section [2] - 109:18, 134:8
secure [1] - 172:20
sediment [3] - 34:15, 126:2, 131:1
sediments [2] - 34:19, 149:13
see [89] - 23:22, 26:7, 38:1, 42:16, 43:8, 43:15, 56:16, 62:5, 65:19, 67:17, 67:20, 68:17, 69:18, 76:22, 77:8, 84:4, 97:20, 100:21, 100:22, 100:24, 101:2, 101:3, 101:15, 101:17, 104:14, 105:4, 105:13, 105:20, 106:2, 106:11, 107:4, 107:5, 107:7, 108:1, 108:3, 111:14, 112:3, 112:5, 112:6, 112:7, 113:2, 113:3, 113:13, 113:14, 113:24, 114:2, 114:3, 115:13, 116:9, 116:10, 116:12, 116:15, 117:21, 118:4, 118:5, 118:7, 124:9, 126:12, 129:21, 130:5, 130:6, 132:4, 133:15, 136:14, 142:1, 144:19, 146:1, 154:15, 156:1, 156:5, 157:3, 157:8, 161:14, 162:12, 162:21, 164:19, 164:22, 169:7, 171:21, 176:13, 177:21, 178:10, 178:18, 179:20, 183:10, 183:11
seeing [1] - 107:14
seeking [2] - 87:6, 87:10
seepage [2] - 98:16, 169:16
send [2] - 38:23, 39:2
sense [2] - 15:4, 58:21
sensitive [7] - 10:5, 10:12, 10:20, 11:25, 16:25, 94:24, 136:1
sensitivity [1] - 93:24
sent [3] - 19:21, 42:12, 50:5
sentence [17] - 54:21, 64:13, 67:5, 67:6, 86:25, 89:21, 98:4, 109:24, 123:6, 123:20, 131:18, 139:14, 139:18, 168:2, 168:14, 169:11, 169:12
sentences [1] - 24:20
separate [3] - 16:9, 44:4, 88:21
separated [1] - 127:12
separately [3] - 50:22, 82:23, 94:2
separating [2] - 16:25, 155:4
September [14] - 6:7, 22:4, 23:4, 25:10, 26:18, 26:22, 51:8, 55:5, 56:2, 65:6, 73:4, 126:7, 133:21, 135:7
series [1] - 49:22
serve [4] - 39:8, 139:10, 139:20, 170:5
service [2] - 30:8, 32:9
set [6] - 38:21, 56:22, 121:17, 135:14, 156:9, 168:18
sets [1] - 122:21
settle [5] - 49:20, 52:11, 52:13, 101:4, 102:8
settleable [4] - 101:2, 101:6, 101:18, 102:2
settled [2] - 72:18, 89:18
settles [1] - 52:15
settling [2] - 54:2, 178:25
setup [1] - 35:4
seven [2] - 10:15, 32:7
seven-year [1] - 32:7
several [2] - 69:1, 89:7
sewage [4] - 68:24, 68:25, 69:11
sewer [2] - 122:18, 123:8
shadow [1] - 34:10
shall [2] - 172:19, 172:22
shallow [3] - 66:23, 158:16, 160:7
shape [3] - 44:22, 98:16, 106:2
sharp [1] - 161:20
sheet [1] - 64:3
shield [1] - 15:9
Ship [5] - 75:19, 145:13, 154:7, 154:8, 155:21
shipments [1] - 19:21
shipped [1] - 17:21
shoot [1] - 105:18
shore [2] - 54:23, 55:25
short [2] - 78:13, 168:18
short-circuiting [1] - 78:13
shoulder [1] - 131:12
shoved [1] - 161:20
show [30] - 9:2, 20:13, 59:14, 60:2, 60:11, 69:21, 88:22, 102:9, 104:16, 106:7, 111:24, 113:8, 113:20, 113:21, 128:1, 142:18, 143:10, 143:17, 144:25, 146:10, 149:25, 150:2, 150:25, 151:14, 151:18, 151:24, 157:1, 159:19, 159:25, 164:18
showed [4] - 79:18, 82:15, 128:2, 145:9
showing [13] - 12:6, 82:19, 142:21, 144:6, 144:22, 144:23, 145:7, 146:24, 146:25, 148:2, 151:23, 156:15, 156:16
shown [1] - 143:11
shows [12] - 20:15, 59:2, 60:1, 80:15, 108:3, 108:15, 108:16, 150:5, 151:19, 154:5, 155:14, 158:12
shred [1] - 47:21
shut [1] - 53:22
shuts [1] - 49:8
sic) [1] - 68:6
side [6] - 43:10, 44:16, 104:13, 107:6, 107:8, 113:16
sides [3] - 13:9, 128:16, 169:15
sides' [1] - 11:24
signature [1] - 6:9
significant [8] - 68:17, 69:18, 73:6, 73:16, 113:12, 116:10, 134:16, 134:19
silly [1] - 114:20
silt [5] - 119:24, 127:24, 128:4, 131:1, 159:2
silts [1] - 126:20
similar [10] - 35:4, 36:21, 37:9, 38:8, 41:17, 54:19, 62:5, 65:9, 66:3, 124:14
similarity [1] - 63:11
similarly [2] - 36:24, 37:11
simple [2] - 43:21, 69:9
sit [3] - 18:18, 115:18, 175:24
site [68] - 6:1, 6:4, 13:20, 14:3, 18:2, 19:22, 21:8, 21:9, 22:3, 22:11, 26:19, 32:16, 33:9, 34:8, 35:3, 35:4, 35:5, 35:16, 35:18, 36:20, 36:25, 39:24, 41:10, 41:13, 41:17, 53:20, 54:18, 55:1, 67:23, 71:14, 79:10, 81:1, 87:14, 103:22, 103:23, 110:2, 112:21, 112:25, 119:24, 120:1, 122:18, 123:8, 125:25, 126:5, 126:6, 126:13, 130:10, 132:6, 139:10, 139:20, 140:6, 140:7, 143:2, 143:3, 143:4, 143:12, 143:18, 150:19, 151:24, 158:7, 159:21, 159:23, 160:5, 167:19, 175:5, 181:2

sites [16] - 31:14, 31:16, 31:17, 34:4, 34:7, 34:16, 34:21, 34:25, 38:20, 39:25, 54:6, 80:6, 80:8, 129:5, 129:8, 142:17
sits [2] - 52:9, 52:18
sitting [1] - 161:13
situation [1] - 125:2
situations [2] - 12:3, 33:16
six [1] - 51:2
size [5] - 49:23, 101:12, 101:23, 101:25
sized [2] - 46:22, 121:14
SJMW [1] - 160:20
SJMWS04 [1] - 163:11
sketch [1] - 29:4
skipped [1] - 127:14
slight [1] - 98:16
slope [2] - 134:3, 134:19
slow [1] - 49:17
slower [1] - 132:12
slowly [3] - 75:16, 83:17, 114:14
sludge [102] - 17:20, 18:1, 19:17, 19:18, 20:1, 20:2, 20:14, 21:13, 22:11, 22:18, 23:17, 42:12, 42:16, 42:17, 42:19, 45:18, 46:3, 46:22, 46:24, 46:25, 47:1, 47:3, 47:4, 47:11, 47:14, 48:21, 49:12, 50:4, 50:13, 50:16, 50:18, 51:11, 51:15, 51:19, 51:22, 52:1, 52:13, 53:23, 54:2, 54:4, 54:6, 54:9, 54:13, 54:17, 54:19, 54:23, 54:25, 55:14, 55:25, 56:6, 56:25, 57:23, 58:5, 58:23, 58:24, 59:3, 59:7, 59:13, 62:1, 62:6, 63:2, 63:4, 64:3, 64:15, 64:17, 65:1, 65:5, 65:10, 65:17, 65:20, 66:18, 66:22, 67:7, 67:8, 67:22, 68:16, 72:14, 73:7, 74:17, 74:22, 74:23, 75:1, 75:4, 75:10, 108:24, 110:20, 111:5, 120:21, 122:18, 122:24, 123:8, 123:20, 124:11, 124:20, 125:15, 126:8, 126:16, 133:14, 178:24, 179:3
slurry [1] - 124:24
small [8] - 37:25, 43:19, 100:6, 100:12, 100:15, 100:18, 102:4, 147:12
smaller [4] - 101:14, 147:19, 147:21, 147:22
smoother [1] - 152:16
so.. [1] - 59:18
soda [1] - 47:24
sodium [1] - 47:24
softer [1] - 110:23
soil [5] - 44:3, 124:25, 126:18, 127:16, 128:21
soils [1] - 119:23
solid [14] - 49:21, 52:7, 52:20, 64:2, 65:4, 66:1, 75:7, 75:14, 102:3, 125:1, 125:15, 125:18, 157:13
solidifies [1] - 168:7
solidify [2] - 110:23, 168:3
solids [18] - 52:10, 52:11, 52:15, 52:21, 65:7, 69:23, 71:7, 72:18, 75:1, 89:18, 101:6, 101:18, 123:25, 124:3, 124:5, 124:21, 124:23, 125:20
solubility [7] - 37:9, 37:12, 37:22, 37:23, 38:3, 38:6, 38:7
soluble [2] - 37:18, 38:9
someone [3] - 8:22, 33:11, 94:2
sometime [1] - 135:6
sometimes [2] - 129:10, 176:3
somewhere [3] - 46:7, 70:20, 106:22
soon [2] - 27:3, 98:20
sorry [13] - 8:25, 18:12, 19:11, 74:3, 77:2, 81:7, 88:16, 143:25, 156:3, 163:2, 163:22, 169:5, 180:8
sort [12] - 34:20, 40:15, 51:13, 56:22, 69:25, 73:11, 75:15, 75:16, 113:4, 116:12, 183:6
sorted [1] - 25:20
sought [1] - 87:24
sound [2] - 114:20, 171:24
sounds [3] - 60:5, 69:8, 171:25
source [2] - 42:21, 75:13
south [6] - 18:19, 31:10, 80:21, 85:7, 85:9, 145:19
southern [40] - 17:19, 18:22, 19:9, 19:14, 20:16, 20:25, 21:19, 24:1, 24:3, 26:10, 78:17, 78:22, 78:23, 79:5, 79:16, 79:17, 79:19, 79:25, 80:1, 80:12, 80:17, 80:18, 80:25, 81:13, 81:23, 82:1, 82:3, 82:12, 82:13, 83:6, 84:2, 84:10, 85:6, 85:7, 85:12, 87:5, 87:7, 88:13, 88:25, 93:7
southwest [1] - 31:10
space [1] - 146:13
sparingly [1] - 38:9
speaking [2] - 32:23, 33:1
special [1] - 136:2
specific [2] - 8:4, 17:6
specifically [7] - 6:2, 10:1, 16:17, 16:20, 20:5, 68:15, 80:20
speculation [6] - 55:17, 57:9, 129:2, 136:22, 137:6, 137:19
spell [1] - 162:2
spend [1] - 93:6
spent [2] - 42:1, 153:22
spill [1] - 40:4
spoil [1] - 54:9
spoken [1] - 183:2
spot [1] - 154:17
stability [2] - 149:18, 150:1
stable [2] - 36:2, 149:1
stamp [1] - 97:20
stamped [2] - 87:1, 98:3
stand [16] - 22:16, 28:3, 29:20, 58:12, 61:9, 61:13, 61:21, 66:18, 66:23, 82:8, 96:24, 103:16, 103:18, 104:20, 133:1, 168:6
standard [1] - 32:11
standpoint [1] - 10:19
stands [3] - 160:20, 164:13, 168:8
STANFIELD [8] - 3:18, 23:2, 23:9, 24:9, 24:17, 25:4, 25:8, 102:23
start [24] - 22:4, 24:20, 27:14, 29:23, 30:1, 34:11, 40:8, 86:10, 107:7, 108:1, 113:14, 114:1, 116:12, 135:4, 135:15, 139:1, 141:13, 146:1, 147:16, 160:17, 166:23, 183:10, 183:12
started [5] - 17:23, 21:12, 30:4, 47:4, 73:10
starting [8] - 11:7, 11:11, 25:6, 99:14, 107:7, 114:3, 139:17, 141:23
starts [3] - 10:9, 145:12, 154:9
state [12] - 5:14, 28:20, 30:18, 30:21, 30:22, 31:6, 31:20, 34:1, 97:18, 155:9, 167:4, 172:23
STATE [3] - 1:4, 2:17, 184:1
State [5] - 71:13, 73:15, 76:21, 97:11, 184:5
state's [1] - 5:11
State's [1] - 15:8
state_A0309862 [1] - 5:17
statement [7] - 6:17, 6:20, 56:1, 76:13, 94:1, 177:6, 179:16
statements [6] - 15:13, 16:13, 16:15, 17:3, 77:8, 93:16
states [4] - 30:20, 55:24, 139:18, 158:23
States [1] - 34:12
STATION [1] - 2:19
stay [2] - 32:13, 62:24
stays [3] - 116:16, 124:2, 124:4
stenotype [1] - 1:21
step [3] - 127:14, 132:22, 148:12
Stewart [1] - 31:23
stick [2] - 109:1, 126:19
still [13] - 19:8, 29:13, 47:19, 52:19, 106:19, 106:25, 125:8, 155:12, 157:8, 162:7, 165:15, 168:8, 168:12
stipulation [12] - 13:25, 14:1, 14:7, 14:24, 15:1, 24:21, 93:2, 93:19, 94:9, 95:17, 95:25, 171:21
stir [1] - 114:12
stood [1] - 91:20
stop [6] - 23:10, 44:2, 72:16, 86:5, 154:18, 158:17
storage [1] - 67:8
storing [1] - 179:10
straighten [1] - 78:25
straightforward [1] - 45:25
STRAWN [1] - 4:5
stream [1] - 122:11
STREET [3] - 2:5, 3:15, 4:6
strengthening [1] - 113:4
stricken [1] - 81:3
strike [1] - 123:15
strong [2] - 70:4, 126:14
structure [2] - 36:10, 44:3
student [2] - 33:11, 38:21
students [5] - 33:7, 33:22, 33:25, 37:4, 38:12
studies [3] - 37:5, 37:8, 39:21
study [6] - 34:2, 34:14, 34:18, 40:23, 41:12, 141:19
Study [1] - 141:16
studying [1] - 41:10
stuff [11] - 50:3, 52:3, 52:5, 67:10, 69:9, 98:8, 100:22, 101:17, 131:20, 133:11, 159:12
styled [1] - 184:10
styrofoam [1] - 110:7
submerged [10] -

99:24, 100:8, 104:6, 104:17, 105:7, 105:8, 105:14, 105:16, 105:19, 129:20
submit [2] - 39:2, 39:10
subparagraph [1] - 172:18
substance [3] - 31:10, 36:12, 111:9
substitute [1] - 37:5
substitution [1] - 37:2
successfully [1] - 110:1
suck [1] - 69:4
sucking [1] - 161:23
sugar [3] - 37:19, 37:20
suggest [2] - 92:19, 94:4
suggested [2] - 92:4, 92:23
suggesting [1] - 93:8
suggestion [3] - 94:11, 94:12, 151:22
suggests [1] - 111:1
suit [1] - 80:10
SUITE [2] - 3:6, 3:15
suits [1] - 79:3
sulfide [1] - 47:25
sum [1] - 140:10
summarize [1] - 152:22
Superfund [6] - 13:16, 34:16, 34:25, 35:16, 141:16, 143:4
superintendent [1] - 131:24
supplement [3] - 5:22, 148:19, 148:21
supplemental [1] - 148:25
support [4] - 84:7, 149:1, 153:25, 154:3
supports [3] - 150:25, 151:14, 165:21
supposed [2] - 9:3, 87:19
surface [18] - 114:9, 114:14, 117:1, 149:12, 153:4, 153:21, 156:21, 158:20, 159:1, 159:4, 159:5, 159:8, 159:11, 159:16, 160:8, 160:20, 160:21, 161:13
surrogate [1] - 37:2
surrounding [3] - 119:11, 143:17, 143:18
survey [14] - 54:1, 96:20, 102:15, 103:6, 103:7, 103:11, 104:3, 104:8, 105:3, 105:9, 105:25, 106:20, 115:19
surveyor [3] - 104:14, 104:18, 106:1
suspended [1] - 149:13
sustain [1] - 60:10
sustained [5] - 60:6, 123:17, 129:3, 129:15, 138:1
swear [1] - 176:4
swim [1] - 71:9
swimming [9] - 46:15, 46:16, 46:17, 49:2, 49:3, 49:16, 50:1, 52:2, 121:14
switched [1] - 11:17
sword [1] - 15:9
sworn [3] - 28:5, 28:6, 28:14
SYDNEY [1] - 3:10
system [5] - 31:4, 32:6, 33:19, 69:7, 135:22
systems [2] - 44:5, 47:13

T

Tab [2] - 169:5, 180:8
table [12] - 55:22, 72:1, 143:20, 145:23, 146:6, 153:24, 153:25, 155:16, 162:25, 164:1, 165:20, 175:24
tables [2] - 148:19, 157:11
tabulated [1] - 54:4
Talboys [5] - 53:4, 53:8, 53:10, 53:16, 53:19
talks [3] - 84:10, 84:23, 90:23
target [1] - 161:11
TCDD [3] - 147:10, 149:11, 164:13
TCDF [1] - 149:11
TCEQ [11] - 5:14, 6:3, 6:4, 6:12, 6:19, 15:13, 15:21, 16:13, 16:16, 16:18, 17:3
tea [1] - 37:19
teach [1] - 33:11
teaching [4] - 30:8, 32:9, 33:7, 33:21
Tech [1] - 34:18
technically [1] - 59:5
technique [1] - 34:15
technology [2] - 35:17, 39:16
telephone [1] - 180:16
tend [3] - 34:25, 36:7, 100:17
tendency [2] - 38:3, 144:20
tendered [2] - 122:7, 184:15
tendered) [3] - 21:23, 51:1, 176:23
tends [3] - 36:7, 37:9, 70:4
tenure [2] - 32:3, 32:6
term [9] - 37:12, 46:24, 47:11, 47:12, 47:14, 68:21, 130:21, 130:22, 158:18
termed [1] - 134:9
terms [5] - 10:8, 34:17, 63:10, 94:2, 140:1
test [23] - 61:20, 61:25, 62:1, 62:15, 64:1, 64:12, 64:20, 64:23, 65:9, 68:10, 68:18, 70:7, 71:3, 71:4, 71:5, 71:12, 71:20, 81:22, 81:25, 84:23, 84:25, 85:1, 85:2
testified [4] - 23:3, 28:14, 88:12, 175:9
testify [1] - 181:23
testifying [2] - 168:25, 176:5
testimony [9] - 8:4, 25:3, 62:21, 63:9, 95:6, 96:10, 137:20, 168:25, 170:20
testing [16] - 6:10, 6:11, 57:24, 59:1, 59:12, 62:4, 62:5, 63:10, 67:25, 69:23, 71:1, 79:15, 79:20, 81:16, 163:18, 163:19
tests [3] - 62:11, 64:14, 68:13
tetrachloro [1] - 164:14
TEXAS [14] - 1:4, 1:5, 1:5, 1:11, 2:6, 2:12, 2:17, 2:18, 2:19, 3:4, 3:6, 3:16, 4:6, 184:1
Texas [13] - 1:20, 34:18, 39:22, 64:21, 68:10, 71:13, 73:15, 96:8, 127:14, 184:5, 184:21, 184:23, 184:24
text [1] - 77:2
THE [188] - 1:4, 1:4, 2:3, 2:11, 2:17, 2:18, 3:4, 3:14, 5:3, 5:25, 6:20, 6:24, 7:7, 8:6, 8:12, 9:5, 9:8, 9:24, 11:4, 11:10, 11:19, 12:18, 12:21, 13:3, 13:6, 14:4, 14:12, 14:15, 15:5, 15:10, 15:19, 15:24, 16:15, 16:23, 17:2, 18:15, 18:21, 19:8, 19:11, 19:23, 20:12, 20:20, 20:23, 21:16, 22:17, 22:22, 23:13, 23:22, 24:16, 24:18, 24:24, 25:1, 25:16, 26:1, 26:12, 27:3, 27:12, 27:20, 28:4, 28:12, 50:9, 50:19, 50:25, 55:20, 57:11, 57:15, 57:20, 58:4, 58:8, 58:18, 58:25, 59:16, 59:24, 60:7, 60:9, 60:17, 61:2, 61:6, 61:12, 62:20, 62:23, 63:8, 63:14, 63:17, 63:20, 64:8, 68:8, 76:16, 77:18, 77:24, 78:4, 78:18, 79:7, 79:12, 80:3, 81:11, 81:20, 81:24, 82:6, 82:9, 82:19, 82:22, 83:8, 84:4, 84:18, 85:16, 85:22, 85:25, 86:5, 86:9, 86:25, 87:2, 87:22, 88:3, 88:20, 89:2, 89:4, 89:10, 89:17, 89:22, 90:2, 90:8, 90:24, 91:3, 91:7, 91:9, 91:12, 91:17, 91:24, 92:15, 92:25, 93:18, 93:24, 94:17, 94:23, 95:3, 96:3, 96:11, 96:16, 96:18, 96:23, 97:1, 102:20, 102:25, 103:18, 115:3, 118:23, 119:1, 122:6, 123:17, 129:3, 129:15, 131:13, 132:20, 133:1, 136:23, 137:7, 137:21, 138:1, 138:10, 141:4, 148:7, 148:11, 148:15, 148:21, 149:10, 149:24, 150:7, 150:14, 150:20, 150:24, 151:10, 152:1, 152:8, 152:10, 152:15, 152:18, 157:20, 166:2, 166:3, 170:14, 173:11, 173:15, 176:22, 177:23, 183:8, 184:1
themselves [1] - 157:4
therefore [3] - 58:4, 112:18, 130:1
thereto [1] - 172:24
thesis [1] - 35:23
they've [1] - 79:3
thinks [1] - 137:9
third [15] - 24:14, 41:15, 79:14, 82:17, 82:20, 83:15, 106:23, 114:4, 121:6, 127:12, 139:13, 139:14, 153:12, 162:22, 162:24
thirds [1] - 51:24
thousands [1] - 101:22
three [16] - 6:19, 16:14, 29:12, 35:21, 43:14, 43:15, 43:16, 66:24, 74:21, 74:24, 75:2, 99:25, 118:8, 132:11, 132:15, 134:1
throughout [3] - 13:8, 62:11, 149:21
throw [2] - 49:14, 66:18
thrown [1] - 66:22
tidal [2] - 99:21, 153:4
tides [3] - 105:7, 106:18, 130:13
tied [2] - 151:19, 152:12
timeline [6] - 40:15, 40:17, 99:5, 123:11, 178:9, 180:13
tiny [4] - 147:24, 147:25, 153:12, 155:4
tip [1] - 161:20

title [2] - 6:17, 162:23
today [7] - 7:6, 17:9, 32:21, 39:18, 47:20, 164:8, 173:7
today's [1] - 110:5
together [10] - 30:20, 42:5, 44:4, 45:12, 54:4, 75:17, 109:2, 119:25, 126:19, 155:6
took [8] - 41:13, 55:7, 94:18, 120:21, 124:16, 132:18, 161:19, 162:17
top [19] - 30:11, 31:7, 52:12, 55:4, 56:13, 56:15, 64:11, 64:19, 97:17, 145:1, 146:7, 147:1, 154:14, 154:16, 154:25, 161:13, 162:15, 162:16
topic [2] - 173:7, 173:9
total [2] - 121:11, 143:3
totally [5] - 18:8, 124:17, 124:19, 125:2, 125:5
toward [1] - 9:22
TOWER [1] - 2:5
toxic [2] - 109:21, 111:15
toxins [2] - 7:16, 8:17
track [1] - 160:25
tracked [1] - 37:1
tract [1] - 106:24
trail [1] - 95:19
training [2] - 29:23, 30:4
transcript [7] - 5:8, 8:3, 11:20, 16:12, 17:6, 18:25, 176:21
transcription [2] - 1:22, 184:7
transport [2] - 165:11, 171:7
transported [1] - 100:19
transporting [1] - 54:5
travel [1] - 42:4
traveling [1] - 150:19
TRAVIS [1] - 2:5
treat [1] - 49:15
treatment [2] - 47:13, 49:15
tree [2] - 47:20, 48:1
tremendous [1] - 48:25
TRIAL [1] - 1:2
trial [20] - 1:18, 10:23, 10:24, 12:12, 16:24, 19:13, 22:19, 26:4, 81:5, 81:7, 83:24, 93:5, 93:10, 93:11, 94:10, 95:12, 95:14, 123:3, 175:16
tricky [1] - 15:19
trouble [3] - 21:7, 107:14, 107:17
trucking [1] - 54:19
true [3] - 58:18, 170:23, 184:6
truly [1] - 184:14
truth [1] - 176:4
try [9] - 23:11, 26:25, 29:21, 30:20, 31:18, 33:13, 34:14, 136:24, 152:21
trying [9] - 27:5, 31:5, 46:14, 83:18, 92:16, 92:19, 95:20, 159:19, 159:20
TSUCHIYAMA [1] - 2:8
tube [1] - 161:23
Tuesday [1] - 183:11
turn [6] - 7:21, 9:18, 33:11, 48:13, 73:25, 145:23
twice [1] - 150:11
two [56] - 9:2, 9:11, 9:12, 9:19, 14:20, 20:16, 24:20, 40:11, 44:5, 47:25, 51:12, 51:24, 53:1, 53:2, 58:9, 59:5, 63:9, 66:24, 74:7, 75:3, 77:4, 77:7, 79:2, 82:15, 82:16, 83:23, 83:25, 88:11, 95:21, 97:19, 98:11, 98:13, 98:24, 101:5, 101:10, 101:11, 102:6, 104:12, 115:9, 125:5, 128:6, 134:4, 138:22, 139:25, 144:2, 144:6, 154:16, 154:19, 154:21, 155:5, 157:4, 157:11, 161:12, 176:7
two-and-a-half [1] - 75:3
two-thirds [1] - 51:24
twofold [1] - 11:21
tying [2] - 151:11, 151:17
type [8] - 9:23, 29:15, 33:5, 33:17, 33:19, 89:4, 155:1, 164:8
types [2] - 103:14, 161:5
typical [1] - 130:25

U

U.S [1] - 35:13
UAO [3] - 6:11, 13:22, 14:13
ultimately [3] - 73:12, 73:13, 138:18
uncertainty [1] - 70:22
under [13] - 11:16, 13:22, 24:12, 90:3, 90:10, 105:14, 114:21, 115:9, 115:13, 115:14, 122:17, 129:20, 149:21
undergraduate [2] - 33:22, 33:23
underscore [1] - 5:14
understood [5] - 12:13, 73:19, 92:13, 170:9, 170:18
undertaken [1] - 73:20
underwater [4] - 105:21, 112:1, 113:9, 125:3
undisputed [2] - 79:24, 86:2
unduly [1] - 11:15
uneconomical [2] - 77:13, 84:11
unfair [1] - 9:23
unfairly [1] - 11:15
unfortunately [1] - 92:22
unfounded [1] - 83:20
unit [1] - 182:24
United [1] - 34:12
units [1] - 164:20
University [4] - 28:20, 31:21, 41:12, 116:24
university [3] - 32:2, 32:8, 34:3
unless [5] - 24:3, 75:7, 124:14, 129:23, 129:24
unlikely [2] - 54:22, 55:24
unload [1] - 53:19
unloaded [1] - 123:21
unloading [1] - 26:21
unpack [1] - 147:14
unusual [1] - 128:24
up [96] - 6:15, 7:6, 10:6, 12:13, 13:19, 14:2, 16:3, 20:10, 23:23, 24:3, 26:7, 27:17, 29:1, 30:5, 30:11, 31:16, 31:19, 32:20, 34:19, 35:9, 35:15, 35:19, 38:22, 40:3, 43:3, 46:15, 47:15, 55:4, 55:22, 56:21, 59:17, 61:13, 63:18, 63:24, 64:19, 67:5, 68:5, 77:6, 78:25, 88:6, 88:7, 91:20, 92:9, 95:4, 95:5, 97:5, 98:11, 100:21, 100:25, 101:17, 104:16, 104:22, 104:24, 105:7, 105:22, 108:3, 109:6, 109:13, 109:14, 113:4, 114:12, 115:16, 115:20, 117:13, 120:14, 121:5, 121:17, 121:25, 122:21, 127:5, 130:9, 131:9, 133:5, 134:12, 135:14, 138:2, 138:25, 139:1, 142:6, 146:5, 146:9, 151:12, 154:5, 154:9, 155:22, 156:9, 162:23, 163:4, 163:6, 163:20, 164:22, 171:10, 178:13, 183:10, 183:12
upper [3] - 70:12, 74:4, 167:2
upstream [3] - 149:14, 154:17, 157:2
useful [1] - 45:22
uses [1] - 177:6
usual [1] - 128:24

V

vacuum [3] - 66:9, 66:13, 66:14
value [3] - 11:16, 56:20, 140:9
various [4] - 11:1, 40:14, 53:22, 54:3
vector [1] - 112:11
ventured [1] - 179:13
version [4] - 52:16, 52:17, 79:22, 90:7
versus [2] - 73:10, 137:9
vertical [4] - 146:23, 156:16, 168:4, 168:9
via [1] - 26:21
vial [1] - 101:16
view [3] - 11:24, 95:9, 179:2
viewed [1] - 181:1
VINCE [1] - 2:11
virgin [1] - 30:19
visibly [1] - 101:3
visit [1] - 126:13
volatile [3] - 57:1, 57:6, 62:12
volume [4] - 5:18, 46:20, 121:22, 184:9
VOLUME [2] - 1:1
volumes [2] - 7:1, 54:4
voluntarily [1] - 13:21
voluntary [1] - 14:20
vulnerable [1] - 111:3

W

wait [4] - 84:5, 144:25, 146:22
waived [1] - 94:25
walk [5] - 48:7, 51:7, 77:14, 178:22
walking [2] - 149:19, 151:2
wall [4] - 44:4, 168:4, 168:6, 168:9
wander [1] - 152:9
wants [3] - 17:8, 100:16, 144:14
wash [1] - 134:25
washing [2] - 108:4, 134:18
WASHINGTON [1] - 3:22
waste [92] - 7:16, 7:21, 7:23, 8:17, 8:18, 8:21, 20:14, 21:2, 24:4, 25:10, 26:19, 27:1, 31:17, 33:9, 35:7, 36:21, 36:23, 40:22, 42:21, 42:25, 43:8, 47:12, 48:2, 48:4, 48:20, 49:12, 49:19, 49:22, 57:3, 68:11, 68:23, 69:12, 69:13, 69:16, 72:14, 74:17, 74:22, 89:5, 89:13, 89:14, 92:1, 92:5, 92:18, 94:13, 99:1, 99:6, 100:2, 102:16, 104:7, 114:10, 114:16, 132:3, 133:14, 136:3, 138:18,

139:9, 139:19, 141:23, 142:16, 145:22, 149:2, 149:5, 149:18, 153:16, 153:21, 154:12, 157:8, 158:2, 158:3, 158:8, 159:2, 160:9, 161:13, 161:15, 162:8, 162:14, 164:6, 164:20, 165:7, 165:9, 165:14, 171:7, 177:5, 177:12, 179:10, 179:22, 181:9, 181:11
WASTE [4] - 1:10, 1:11, 3:4, 3:4
Waste [6] - 5:10, 6:5, 7:14, 8:2, 9:3, 10:2
Water [1] - 174:21
water [192] - 28:7, 30:13, 30:17, 30:21, 30:25, 31:6, 36:7, 36:8, 37:9, 37:10, 37:12, 37:15, 37:16, 38:2, 38:4, 44:5, 46:25, 47:2, 47:6, 47:13, 48:24, 49:1, 49:13, 49:14, 49:17, 49:18, 52:12, 52:15, 52:16, 52:19, 52:21, 63:7, 64:25, 65:7, 65:10, 65:15, 66:2, 66:11, 66:12, 66:15, 67:3, 67:4, 68:15, 69:3, 69:4, 69:22, 70:3, 70:4, 70:6, 71:8, 72:4, 74:22, 74:23, 75:1, 75:3, 75:5, 75:6, 75:8, 75:13, 75:14, 76:8, 76:10, 76:11, 77:13, 80:1, 80:18, 80:24, 84:8, 84:12, 84:15, 85:13, 85:24, 86:16, 87:24, 90:4, 90:10, 90:14, 90:19, 99:21, 99:23, 99:25, 100:5, 100:6, 100:13, 100:16, 100:17, 100:20, 100:25, 106:18, 106:20, 107:6, 107:9, 107:14, 107:18, 109:2, 112:11, 112:12, 112:13, 112:14, 112:15, 112:18, 113:23, 114:9, 114:17, 114:18, 114:22, 114:24, 115:10, 115:13, 115:14, 116:17, 117:1, 117:9, 117:19, 117:25, 118:5, 123:1, 124:2, 124:7, 124:12, 124:15, 124:21, 124:24, 124:25, 125:1, 125:8, 125:9, 125:11, 125:12, 126:21, 130:1, 130:11, 130:13, 144:3, 144:7, 144:13, 144:14, 144:20, 144:21, 147:1, 149:3, 149:5, 149:6, 149:11, 149:12, 149:14, 153:3, 153:5, 153:8, 153:10, 153:14, 153:20, 154:13, 155:12, 156:19, 156:23, 158:2, 158:16, 158:20, 158:22, 158:25, 159:4, 159:5, 159:10, 159:11, 159:13, 159:15, 159:16, 159:22, 161:14, 161:21, 161:23, 162:7, 162:13, 162:15, 164:19, 164:25, 165:7, 165:9, 165:16, 168:12, 168:18, 168:19
waterline [1] - 108:21
waters [6] - 86:18, 86:22, 87:5, 87:10, 114:23, 117:23
ways [6] - 31:15, 35:9, 35:25, 54:1, 95:6, 175:20
weak [1] - 126:18
weapons [1] - 35:13
weather [2] - 98:18, 120:9
week [4] - 33:13, 35:20, 49:7, 135:16
weekend [1] - 183:12
weeks [2] - 15:7, 39:19
weighed [1] - 11:18
wells [3] - 160:24, 161:3, 161:5
west [3] - 43:10, 92:11, 93:16
western [4] - 43:17, 44:15, 114:4, 161:6
wet [13] - 52:7, 52:15, 54:8, 54:9, 66:2, 67:18, 67:19, 98:18, 109:2, 109:3, 111:1, 111:2, 125:3
wetland [2] - 39:24, 129:6
wetlands [3] - 35:1, 35:2, 39:21
white [5] - 47:23, 47:25, 48:13, 105:5
whole [6] - 43:7, 88:1, 91:18, 99:24, 149:8, 165:10
wide [1] - 46:18
width [2] - 134:4, 134:21
wild [2] - 92:11, 93:16
wildlife [1] - 6:3
Wildlife [1] - 6:19
willingly [1] - 13:21
wind [1] - 114:13
WINN [1] - 3:17
WINSTON [1] - 4:5
withstood [2] - 129:20, 130:11
WITNESS [2] - 166:2, 184:17
Witness [2] - 97:24, 119:12
witness [22] - 19:5, 27:14, 27:25, 28:6, 33:8, 57:19, 58:11, 80:23, 81:4, 82:7, 83:3, 83:21, 87:20, 88:12, 88:20, 94:7, 94:20, 95:20, 170:5, 176:10, 176:17, 176:25
witnesses [2] - 15:16, 83:18
wood [1] - 69:17
word [2] - 57:5, 177:7
words [5] - 14:21, 59:24, 60:10, 149:24, 151:17
worker [1] - 53:12
worth [1] - 50:2
Wotring [46] - 5:4, 17:7, 19:25, 21:17, 23:14, 27:25, 50:10, 51:4, 53:7, 55:23, 58:8, 61:13, 61:16, 61:17, 63:13, 63:14, 63:21, 63:23, 64:1, 64:11, 68:9, 76:20, 87:23, 97:4, 102:21, 103:4, 103:20, 115:5, 119:3, 122:8, 123:19, 129:4, 129:17, 131:14, 133:3, 133:6, 136:23, 136:25, 137:12, 138:5, 138:13, 141:7, 152:19, 152:21, 157:21, 182:19
WOTRING [144] - 2:4, 2:7, 5:5, 5:20, 7:4, 7:8, 11:14, 12:20, 13:13, 17:10, 17:14, 18:5, 18:10, 18:14, 19:10, 19:16, 20:19, 20:21, 21:5, 21:22, 22:5, 22:10, 22:16, 22:20, 22:24, 23:8, 23:18, 24:7, 24:22, 24:25, 25:13, 25:24, 26:9, 27:9, 28:2, 28:10, 28:16, 29:1, 43:3, 50:24, 51:2, 55:18, 55:21, 58:11, 58:21, 60:4, 60:8, 60:14, 63:15, 63:22, 63:24, 64:10, 68:5, 76:15, 77:3, 77:6, 77:22, 78:13, 78:21, 81:15, 82:7, 82:15, 82:21, 82:25, 83:9, 84:5, 88:1, 88:5, 88:16, 89:1, 89:3, 89:6, 89:11, 89:20, 91:20, 92:14, 92:22, 93:15, 94:15, 94:19, 95:2, 96:1, 96:22, 97:5, 97:8, 102:18, 103:2, 103:15, 104:22, 105:22, 108:13, 109:7, 110:17, 111:22, 113:6, 113:11, 113:17, 115:16, 115:20, 116:8, 118:25, 120:14, 121:5, 121:25, 122:5, 127:5, 129:16, 131:9, 131:17, 132:17, 133:4, 134:11, 135:9, 136:5, 136:24, 137:11, 138:2, 138:9, 138:11, 138:25, 141:3, 141:5, 141:12, 143:15, 143:24, 146:4, 148:17, 148:23, 149:9, 150:9, 151:7, 152:6, 152:9, 152:13, 152:20, 156:3, 156:10, 157:19, 160:11, 160:15, 163:6, 165:25, 170:12, 173:5
write [3] - 38:19, 38:22, 39:4
writes [1] - 26:18
writing [1] - 184:8
wrote [1] - 128:7

Y

y'all [3] - 77:25, 95:20, 177:21
yard [5] - 46:9, 46:10, 121:10
yards [11] - 46:7, 46:8, 46:17, 46:18, 46:19, 49:25, 74:4, 74:8, 121:16, 121:19
year [4] - 32:7, 55:6, 73:1, 121:20
years [19] - 6:19, 10:11, 10:16, 16:14, 35:4, 40:5, 41:9, 50:2, 52:11, 55:10, 59:13, 62:6, 66:24, 121:21, 125:16, 157:7, 165:14
yellow [6] - 100:13, 142:2, 142:18, 143:5, 153:14
yesterday [5] - 6:18, 7:13, 13:14, 15:12, 181:1
York [1] - 34:10
you-all [12] - 10:11, 11:25, 13:8, 14:17, 16:2, 27:7, 78:9, 93:6, 93:12, 95:23, 95:24, 108:6

Z

zero [3] - 145:12, 155:20, 156:12
zoom [3] - 160:11, 160:12, 160:15